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VOL. LXXXI No. 2101 [*Registered at the G.P.O. as a newspaper*] LONDON, AUGUST 22, 1959 PRICE NINEPENCE

CURRENT TOPICS

Illegal Operation of Heavier Vehicles

EVIDENCE produced in recent months in the traffic courts and related before the Transport Tribunal suggests that an unknown but probably not insignificant number of goods vehicle operators, some of them possibly innocents, has been running heavier vehicles, carrying more traffic at the expense of others who strive after the letter of the law. These are cases in which there has been a substitution of a vehicle on a special A-licence and the unladen weight of the substituted vehicle has been substantially understated. The root cause of these lamentable malpractices must be the acceptance by taxation authorities, and indirectly by the licensing authorities, of weighbridge certificates without proved indication of the class or condition, or even the identity of the vehicle alleged to have been weighed. It comes as something of a shock to learn that a taxation office is prepared to issue a logbook before receipt of a weighbridge ticket, that is, on unsupported evidence of the unladen weight contained in the application form. There is enough here to suggest that the regulations regarding the submission of weight tickets, and their form and content, should be immediately tightened up; in the meantime it devolves upon licensing authorities to scrutinise unladen weights more closely and certainly not to condone procedural irregularities. The proper solution would seem to be a properly certified weighbridge ticket. In addition, statutory force should be given to the suggestion made by the Transport Tribunal in April this year (in a decision raising similar issues) that an A-licence should specify the unladen weight of every vehicle, including any substituted vehicle. As a tailpiece, it may be said that the revelation of these highly irregular operations suggests that the carrying capacity of the nation's haulage fleet has appreciated even more than Ministry of Transport statistics would allow.

Improve the Storage Battery

A SUGGESTION that the Electricity Council should spend £10 million over the next five years on research on the storage battery was made by Mr. Philip Noel-Baker, M.P., a former Minister of Fuel and Power, at the British Electrical Power Convention at Torquay recently. In proposing the toast of "The Electrical Industry" at the convention dinner Mr. Noel-Baker said: "I believe that you ought to tackle the problem of city transport. Electric vehicles are not yet as efficient as they ought to be. If you go to Los Angeles and see the city smog produced by two million petrol motor cars you realise that this is a very grave social problem. The noise and the fumes of the vehicles that we allow on our city roads are becoming a serious problem." Mr. Noel-Baker thought that the expenditure on research of £2 million a year, which he said worked out at about one-nineteenth of one per cent of the investment which the national electric supply industry had made or projected over a period of 16 years, was not enough. He found it strange and disconcerting that there was never any mention in official documents of research into the storage battery, which he was told had not changed since the days of Faraday. Everybody knew, he continued, that the storage battery was hideously wasteful and grotesquely inefficient and many millions a year had to be spent on the repair and replacement of existing batteries; it was the inadequacy of the batteries which kept the electrical vehicle industry where it was today. "This is a grave social problem," concluded Mr. Noel-Baker. "I believe that if the Electricity Council voted £10 million tomorrow to be spent over the next five years on research on the storage battery they would be doing right and they might be doing a great thing for our own people and rendering an immense service to British exports." The National Research Development Corporation has in fact carried out some promising research into a fundamentally different electric cell, of which more will be heard shortly.

Creating and Meeting Demand

WITH the aim of developing more freight and passenger traffic Coras Iompair Eireann last week announced the establishment of a special commercial department. Four provincial centres are to be established under area managers on the reasoning that this will result in greater flexibility and thereby enhance the ability of the undertaking to conclude contracts for block traffic—these have met with considerable success since the passing of the 1958 Transport Act made their introduction possible. These moves are part of a general scheme for reorganising the internal structure of C.I.E. which is being introduced progressively this year and next. Another step is the establishment of an organisation and personnel department which will incorporate the present staff relations office and the medical department and will develop extensive staff training schemes. The advisory service inherent in the block traffic contracts seems to have been well received. Apart from the immediate matter of transport, problems of marketing and distribution have been handled and opportunity taken to stress the possibilities offered by the extensive network of road and rail services provided by the undertaking. There has lately been a lull in proposals to withdraw railway facilities and this year has seen cessation of service only on the freight branch from Sallins to Tullow, the narrow gauge Cavan and Leitrim system and the Hill of Howth electric tramway. It is obvious that further closures will have to come and the so-called package deals now inaugurated should prove an aid to planning by assisting more exact estimation of likely traffic demand.

More Rubber Seating

NOTHING is more fascinating in the modern world than the constant evolution of new methods of production. The ever-rising cost of labour must always remind the manufacturer of the need for higher productivity, and wherever new materials and techniques have shown this to be possible, one can be certain that the old traditional methods and crafts are doomed to extinction. Even so, such changes do not occur overnight. All too often available capital resources and consumer resistance are critical factors, and success is won only after a hard and lengthy struggle. Something of this kind has now happened to the upholstery trade, where recently we were able to see for ourselves how latex foam rubber is now rapidly superseding the use of older materials. The occasion was an inspection of the new extension to the Harrogate premises of Bintex, Limited. Formed in 1938, this company has developed many latex products, but since the war has concentrated on cushioning, and particularly the needs of the transport industry. Production is highly mechanised and amounts to many thousands of units per week. These are extracted from aluminium moulds with varying types of core layout; these are designed to meet a wide range of specific conditions. In addition a design and prototype service is available to the customer at the drawing board stage — thereby ensuring the most economical means of satisfying his requirements. With such tremendous potentialities in the offing, it is not surprising that this comparatively young industry is imbued with confident expectations and a pioneering spirit that should stand it in good stead.

NEWS SUMMARY

THE contract for 24 DH121 jet air liners with Rolls-Royce RB163 engines to be built by the Aircraft Manufacturing Co., Limited, for British European Airways was signed last week. Airco represents a merging of effort by de Havilland, Fairey and Hunting Aircraft. The order is worth nearly £30 million —see page 11.

Work is to start on the Biggleswade by-pass (2.6 miles in length) and the improvement of 2¼ miles of the Great North Road north of Biggleswade.

An "aircar," based on principles similar to the British-built Hovercraft, is to be produced next November by the Curtiss-Wright Corporation of the United States of America; a four-passenger version, 21 ft. long and 8 ft. wide, is contemplated.

The South Eastern Region Transport Users' Consultative Committee has agreed to the proposed winter suspension of the Newhaven—Dieppe passenger service operated jointly by British Railways and the S.N.C.F.

A contract has been placed by the Ministry of Transport for construction of part of the northern approach of the Dartford—Purfleet tunnel; it includes a 330-yd. reinforced concrete viaduct.

Mr. J. Holden Fraser, O.B.E., B.Sc., A.M.Inst.C.E., M.I.R.S.E., chief signal engineer, British Railways Central Staff, at British Transport Commission headquarters, will retire on September 12. He will be succeeded by Mr. A. W. Woodbridge, O.B.E., M.Sc., M.I.E.E., M.I.R.S.E., at present signal engineer, Western Region, British Railways. Both officers are past-presidents of the Institution of Railway Signal Engineers.

Lord Baillieu, K.B.E., C.M.G., president, Dunlop Rubber Co., Limited, who was chairman of a Departmental Committee which recommended the establishment of a Central Institute of Management in 1946, has been nominated first president of the British Institute of Management.

The Ford Motor Co., Limited, has amplified its Thames Trader range of vehicles with an All Wheel Drive conversion of the 7-tonner which can cope with rough ground conditions in a striking manner—see page 9.

A Northern Aluminium design of light van body, built by Willowbrook, can be supplied in kit form. The prototype is mounted on an Austin 5-ton chassis.

For United Africa Company a Bedford-Duple 19 to 23-seat bus, suitable for conditions in West Africa, has been evolved. The Bedford J2 S chassis, with 16-in. wheels, is used.

London Transport on August 18 operated trolleybuses for the last time on Routes 661 (Aldgate — Leyton), 663 (Aldgate — Chadwell Heath), 691 (Barkingside—Barking) and 693 (Chadwell Heath—Barking) and closed Ilford depot; 99 trolleybuses were withdrawn. New diesel bus connections, from August 19, include Barkingside—Bow and Wanstead—Victoria via Bond Street.

B.I.S.R.A. Corrosion Exhibition

MARKING the publication of the sixth report of the British Iron and Steel Research Association's Corrosion Committee, an exhibition was held at B.I.S.R.A.'s Battersea laboratories on June 11 and 12. Civil, mechanical and constructional engineers and others closely concerned with the problem of rust—estimated to cost the national economy at least £300 million annually—attended the event. Reflecting the content of the report, the exhibition illustrated the work that is being done on the incidence of corrosion of ferrous materials exposed to air, industrial waters, marine conditions and soil burial. Prominence was given to the latest techniques in protective coatings and to methods of testing. The work of the Corrosion Advice Bureau, which was formed in 1954, was also illustrated. Since that date, inquiries from a very wide cross-section of British industry have been dealt with at the rate of over 70 a month, indicating a very real demand for the service from industry as a whole. The work shown on atmospheric corrosion covered investigations of the rusting of bare steel, the effects of surface preparation, the performance of various painting schemes, priming paints, metal coatings and instruments for measuring the thickness of metal coatings. Specimens used in these investigations were displayed showing how bare specimens and specimens with various surface preparations and priming and finishing coats withstood atmospheric conditions as widely different as the pure country air of Llanwrtyd Wells and the polluted atmosphere of Sheffield. From the tropical sunshine of the surf beaches at Lagos came specimens that had been exposed continually to salt spray. The investigations have shown that the most important single factor was the preparation of the surface before painting. Specimen pipes that had been buried for five years in the alluvial soil at Benfleet showed how different types of bitumen and coal-tar pitch coatings had withstood soil corrosion. Another stand showed specimens of ship plate that had been suspended from a raft anchored in the sea at Caernarvon. The surfaces of the plates had been prepared for painting in various ways and painted with different priming and finishing coats to find what best resists marine corrosion. Painting schemes have been developed that will last for up to 12 months.

Remote Control of Tramway Points

INTERESTING possibilities are opened up by the adaptation of Integra automatic train control equipment for operation of a junction on a street tramway in Zurich. The line is used by light railway trains of the Forchbahn, running south-eastward out of the city. Hitherto the points have been operated by the pantographs of the cars as have others on the Zurich tramways network. This method is no longer suitable for the Forchbahn trains, which are now running in multiple-unit and can run without change of composition in either direction; the pantograph may therefore be at the trailing end. To meet this problem Integra flush-mounted a receiver as used for a.t.c., with proving devices between the rails on the street surface, the receiver being so designed as to allow traffic to pass over it without damage. A magnet on either end of the multiple-unit Forchbahn train (that is, one on the motor and one on the control trailer coach) excites this receiver. The magnet at the front of the unit works through the receiver to set the points while that at the end puts them to normal again. The magnets are in continuous operation during the running of the train.

Metal Diffusion Advances

RECENT improvements in the techniques of metal diffusion appear to open the way for an advantageous expansion of their application to various of the machines and appurtenances in the service of the transport industry. The ability to diffuse a small amount of one metal into and evenly over the surface of another, thus altering the physical and chemical behaviour of the parent metal at its surface, has been known and practised for many years. The most-widely used application is chromising—the diffusion of chromium into mild steel or cast iron, though the potential applications are by no means confined to these metals. In general, metal-diffusion processes are used to impart into cheap easily worked metals protection from the effects of heat, corrosion or wear comparable with that otherwise provided only by expensive steel alloys. A limiting factor with earlier processes has been the depth of diffusion and surface purity economically obtainable. A considerable advance in these respects has been achieved in a patented process first developed to commercial practicability in 1958 by Metal Diffusions, Limited, Isleworth, Middlesex. With this process, named Dicrom, it is possible to produce depths of diffusion between one and 15 thousandths of an inch and surface purity of up to 96 per cent. For most commercial applications it has been found that depth diffusion of three to five thousandths of an inch and a surface concentration of chromium between 60 and 75 per cent provide satisfactory results at substantially lower cost than alloy steels providing the same degree of protection. In some applications Dicrom-treated steel is said to be superior to nickel-chromium alloy steels. The diffused chromium can be electro-polished to produce a finish comparable with chromium plating at competitive cost and having the advantage of inseparability from the parent metal.

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MODERN TRANSPORT

Published Every Friday

RUSSELL COURT, 3-16 WOBURN PLACE, LONDON, W.C.1

Telephone Number: TERminus 0303 (3 lines)
Telegraphic Address: Transpubco, Westcent, London

ANNUAL SUBSCRIPTIONS
BRITISH ISLES, 35/-; CANADA, 32/6;
ELSEWHERE ABROAD, 35/-
payable in advance and postage free

The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements.

Re-appraisal

BASIC principles of the British Railways modernisation plan are vindicated in the White Paper (H.M. Stationery Office, Cmd. 813, price 3s.) which incorporates Sir Brian Robertson's re-appraisal for the Minister of Transport. Some review of achievements and objectives seemed desirable in view of the deterioration of the British Transport Commission's financial position, accentuated as it was in 1958 by unexpected reduction in activity in the heavy industries with consequent heavy falls in coal and mineral carryings. This review is accompanied by an assessment of the economic position over the next five years based on the traffics likely to be attracted to the railways and this is summarised elsewhere in this issue. The modernisation plan stays almost unaltered in essentials, but provision is made for considerable acceleration of its execution, especially in the bringing forward of Phase II of the Kent electrification and the determination to complete the London Midland electrification between Euston and Liverpool and Manchester by 1964. The rationalisation of the system is also to be carried out at greater speed, with the closing of more than 1,000 depots and stations, including many wayside stations on main lines, the lopping off of perhaps 1,800 miles of route, and a more logical arrangement of terminals and yards.

Less Equipment—More Work

CONTRACTION of the system, the White Paper points out, is a far from negative process, because it aims at revival of British Railways as a whole. Contrary to the allegations of Father Geogehan in correspondence in *The Times* the scrutiny of the consultative committees is critical as well as impartial and in any event the Commission appears to be maintaining considerable sections of line as a public duty with little or no hope of eventual profitability, despite the competition to which it is subject. The railway system will ultimately be less widespread but more intensively operated, with the logical use of road transport to serve the "thin ends." At the end of 1954 there were nearly 19,000 locomotives—a figure reduced at the end of last year to 17,500, including 16,000 steam engines. The 1963 figure is expected to be about 11,500, of which only 7,000 will be steam. There will be 2,300 main-line diesels and 2,000 diesel shunters. The stock of passenger vehicles will be reduced from 42,000 to about 35,000. Of these totals diesel or electric multiple-unit sets represented 7,500 coaches in 1958 and will probably total 11,500 in 1963. Greater availability of the multiple units and the intensive use of the 23,500 locomotive-hauled coaches in five years' time will enable the smaller number of vehicles to carry the increased traffics anticipated on previous modernisation experience. The shortfall of £500,000 a year in the Norwich area has been turned to a margin of £250,000 above train working costs by the diesel sets; the Cardiff—Hereford—Birmingham or Shrewsbury experience is from £250,000 down in steam days to £100,000 in hand with diesels. Southend electrification receipts are up by half a million and the Kent coast line has done better by £125,000 in its first six—admittedly sunny—weeks. The swifter tempo of electrification, civil engineering work including introduction of long-welded rails and other track improvements and resignalling will strain technical resources; the Commission is fortunate in being offered staff from the New York Central and the Netherlands Railways to overcome the bottleneck in signal engineering design work.

Quicker Freight Movement

LESS precision is possible in dealing with the freight wagon stock in 1963 owing to causes outside B.T.C. control, from the level of production to the length and direction of traffic flows. The number of wagons has fallen by 100,000 in four years and it is estimated that operational requirements at the end of 1963 will be between 700,000 and 800,000. For the purpose of re-appraisal 750,000 has been taken as an appropriate figure. The aggregate capacity will not be a mere 75 per cent of that today, because new wagons taken into stock as replacements will be of 21-ton or larger types. Nevertheless, to carry even the same volume of traffic as in 1957 (and if the assumed increase in general economic activity materialises, the Commission expects to carry more general merchandise by 1963) the wagon stock is being cut by one-fourth, a drastic reduction which calls for a considerable increase in mobility, much of which must be derived from faster running and quicker turn-round. The shorter turn-round time depends largely on customer co-operation, which may or may not be forthcoming, although higher demurrage rates, reorganisation of the coal trade and increasing use of containers or palletisation will no doubt assist. For faster running reliance must be placed on equipping all the stock with vacuum brakes. Target date for merchandise wagons is mid-1960, but there is still a long way to go on the rest, for which automatic coupling—covering also the brake pipe—now seems desirable. While in Europe the automatic coupler is not deemed essential on air-braked stock and in America the standard automatic coupler does not include the brake pipe, our shorter hauls and other insular conditions appear to make it vital to quick making up of trains in yards. Much therefore depends on how quickly the present trials of automatic couplers can be brought successfully to a conclusion and production and fitting embarked upon. Each wagon so equipped will cost about 50 per cent more than its hand-braked loose-coupled forerunner. Speed will be added to wagon movement, of course, by better siting of the smaller number of marshalling yards and terminal depots after modernisation.

Debate in the Commons

IN the subsequent debate in the House of Commons Mr. Richard Nugent, Parliamentary Secretary to the Ministry of Transport, congratulated the Commission on its re-appraisal of the plan, which he confirmed as being broadly right in outline; he promised Government support of the policy of swift modernisation. As to the required extra capital expenditure the Government would give careful attention to the Commission's programme. Consideration would be given to any suggestion from the B.T.C. chairman regarding the financial structure, but if there was to be any shifting from the present central authority with straight obligations to repay interest and capital they must be sure that it would strengthen financial discipline. Regional accountability had been suggested and this was in line with the Government's policy of increasing regional autonomy. This aspect was later emphasised by the Minister himself who intimated that further progress was intended with the policy of decentralisation, giving greater chance to the regions to run their own affairs in their own way. On the other hand, they did not intend, as had been suggested in some quarters, to throw the industry back into the melting pot and denationalise it. Hence one gathers that, so far at any rate, it is not the Government's intention to accept the ludicrous proposal for breaking down B.T.C. activities and "hiving off" the profitable sections to private enterprise. As to the suggestion that the re-appraisal was the outcome of Government pressure Mr. Harold Watkinson said that Sir Brian Robertson had asked him to say it had been put forward as the best judgment the Commission could make, entirely on the latter's initiative and supported by the area boards and senior executives.

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ROAD GOODS TRANSPORT OPERATIONS

M.o.T. Reports on its Sample Survey

INDUSTRY HAS ADVANCED TO MAJOR ROLE

ROAD transport must now be regarded as the major means of inland movement; although C-licensed operations have increased with haulage, a statistical survey cannot attempt to judge the efficiency or otherwise of own transport. This is the gist of the report on the Ministry of Transport sample survey carried out in Britain in April, 1958*. A similar survey was carried out in September, 1952 (report in MODERN TRANSPORT, May 8, 1954). The number of forms sent out and used for the survey was 7,372; returns were made in respect of 98 per cent of the vehicles in use during the sample week, but some vehicles had been disposed of and 10.5 per cent of all vehicles sampled proved not to be running at all that week. In the heavier classes, these non-runners were predominantly C-licensed, e.g., 13.2 per cent in the 3-5 tons unladen range, compared with only 5.3 per cent of those A-licensed. The 52,000 farmers' "F" vehicles were excluded from review, as were Government vehicles.

TABLE I—VEHICLE MILEAGE LOADED AND EMPTY
A- and C-Licences: Per Cent

Unladen weight	*Loaded over 50 per cent*		*Loaded under 50 per cent*		*Empty*	
	A	*C*	*A*	*C*	*A*	*C*
2½-3 tons ..	57	44	20	28	23	28
3 -5 tons ..	62	47	12	21	26	32
Over 5 tons ..	74	54	8	17	18	29

The statistics employed in the report attempt to measure the use made of the vehicles by reference to the number of miles run, ton-miles of work performed and tons carried during the sample week. The authors stress that ton-mileage, that is the weight of each load multiplied by the distance it is carried, has its limitations, but it is a unit of measurement which reflects both weights and distances. It is in some ways more significant for heavy goods which, fill vehicles to their weight capacities than for goods which are light but bulky and which therefore fill the available space in a vehicle before it is loaded to its carrying capacity in terms of weight. Nevertheless, the ton-mile remains the best single statistical unit with which to attempt to measure all the variety of traffics passing by road, and the only one which permits a genuine comparison with other forms of transport. They emphasise (and this has particular relevance to the C-licence issue) that "the statistics in this report are an attempt to measure what is measurable in road transport; they should not obscure the underlying complexity."

Treatment of Distribution Work

In the case of trips on which goods were picked up or set down at several points, which have been labelled "intermediate" journeys, a convention was adopted. The mileage run loaded over 50 per cent of the weight capacity was multiplied by a tonnage midway between the maximum load at any point on the journey and half the vehicle's carrying capacity. The mileage run loaded not over 50 per cent of the weight capacity was multiplied by one quarter of the carrying capacity. This method assumes a steady and continuous rate of setting down or picking up throughout the journey. A number of the forms received was sufficiently detailed to enable the validity of this assumption to be checked and it was found that while on some trips the convention led to an underestimate of the ton-mileage it worked satisfactorily when applied over a number of journeys. Only about 30 per cent of the vehicles were wholly engaged in intermediate work. In the case of journeys on which returned empties were picked up allowances were made in the calculations of ton-mileage on the basis of information contained in the forms and by making further inquiries of operators. Some figures of empty running are shown in table 1.

Average Lengths of Haul

Estimates are made of the average lengths of haul of all vehicles by unladen weight and licence categories. These are subject to wide margins of error but on average the A-licensed vehicle of 3-5 tons unladen makes a haul of 34-51 miles, and a vehicle over 5 tons unladen travels 90-121 miles. For C-licensed vehicles the comparable mileage ranges are 17-26 and 33-35. A comparison between vehicle-miles and ton-miles per week for A- and C-vehicles appears in table II. (In both tables I and II "A-licences" excludes contract A-licences.)

TABLE III—ROAD AND RAIL TRAFFIC

	Ton-miles (thousand millions)		*Percentage of ton-miles*	
	1952	*1958*	*1952*	*1958*
Road	18.8	23.1	46	56
Rail	22.4	18.3	54	44
	41.2	41.4	100	100

Dealing with each class of carriers' licence in turn, the report notes that if the average ton-mileages compiled from the 1958 survey are compared with the weighted averages of the figures for A-licensed vehicles and B.R.S. vehicles at the time of the 1952 inquiry, it appears that there have been increases in respect of the larger vehicles of between one-third and one-sixth. The difficulty in making a straight comparison is, of course, that since 1952 there have been four changes in circumstances which may have contributed to these increases. In the first place the 25-mile radius restriction imposed on many A-licences under the Transport Act, 1947, has been removed; a substantial proportion of B.R.S. vehicles has been sold to other operators; the speed limit on heavy goods vehicles has since been raised to 30 m.p.h.; there has been an increase of about 8 per cent in the average carrying capacity of the A-vehicles of over 5 tons unladen weight.

It is not possible to evaluate the contributions of these four changes but in total there seems to have been a substantial rise in the average amount of work done by the larger vehicles operated for hire, say the authors. The bare facts, for what they are worth, are that in 1952 A-vehicles weighing 5 tons or more unladen (restricted to an unknown degree by the 25-mile radius) averaged 3,070 ton-miles per week, and B.R.S. vehicles averaged 5,945 ton-miles. Last year, lumped together, this class of vehicle was generating 6,308 ton-miles per week.

The number of contract A-vehicles has increased substantially in recent years. In September, 1952, there were 13,005 vehicles of which 3,272 were of over 3 tons unladen weight. In June, 1958, there were 25,433 of which 11,736 were over 3 tons.

A good deal of the traffic of the medium weight and heavy C-licence vehicles was carried on hauls of appreciable length. For example, the average length of haul of vehicles of 3 to 5 tons unladen weight, as already indicated, was probably between 17 and 26 miles, but about half a million tons per week were carried by vehicles with average hauls of over 40 miles. In total C-licensed vehicles of all sizes probably carried nearly 1¼ million tons a week on hauls of more than 40 miles, out of a total traffic passing over these distances of rather under 3½ million tons.

Mileage of C-Vehicles

The figures in table II show that C-vehicles tend on an average to be less intensively used, when intensity of use is measured by the vehicle-mileage or ton-mileage performed in a period of time. It must be stressed that these figures are only averages and in many instances individual C-licensed vehicles will be running many more miles than considerable numbers of A-licensed vehicles of the same size. For example, among the vehicles of over 5 tons unladen weight over 30 per cent of the C-vehicles ran more miles in the week than the average figure for the A-vehicles. Hence it would in any case be dangerous to base very positive statements on these averages.

To sum up, the report says that the statistics set out appear at first sight to indicate that ancillary vehicles are less intensively used than haulage vehicles and that they are consequently in some sense "inefficient." "Further examination, however, corrects this impression. The comparatively low average vehicle-mileages and ton-mileages are largely the result of a number of influences which are inherent in the nature of the work which these vehicles are performing. Hence it is not possible to compare efficiencies by comparing figures of vehicle-mileage, ton-mileages or load factors. The dominant influence is the type of operation, and many criticisms of C-licence operation appear to be based on a misunderstanding of this. The information obtained by this inquiry provides no evidence of inefficiency in C-licence operation."

Conclusions on matters of this kind, it goes on, cannot be drawn from figures relating to a large number of vehicles performing a wide variety of types of work. The effect which any difference in managerial competence may have will be swamped by variations due to the nature of the work which vehicles are performing. Statistics, moreover, cannot indicate how well the services which the vehicle provide suit the needs of the users. Ancillary operations are extremely varied, having clearly been adapted to the particular needs of individual firms at particular times and in respect of particular consignments in all manner of special circumstances. No statistics of the operation of the vehicles can measure the extent of the resulting economies and advantages which accrue to the users at other stages of the process of production and distribution. Gains of these kinds will be taken into account by firms when deciding whether to operate vehicles on own account or not, but these advantages will not be reflected in and cannot be measured by statistical or other information relating to transport.

TABLE II—WEEKLY VEHICLE- AND TON-MILEAGE
A- and C-Licences

Unladen weight	*Average vehicle-miles*		*Average ton-miles*	
	A	*C*	*A*	*C*
2½-3 tons	402	313	1,343	637
3 -5 tons	542	399	2,590	1,212
Over 5 tons	703	522	6,308	3,037

Global Road Traffic Picture

When it comes to grossing up the results of the sample survey in order to arrive at global estimates of road traffic the authors point out that comparisons with the previous inquiry can only be made with extreme caution. Apart from the normal margins of error, the inquiry conducted in 1958 was held at a different time of the year from that of 1952 and little is known of the seasonal patterns of traffic of the various categories of vehicles. Moreover, in 1958 some trades and industries were slack while others were active.

A few tentative comments can be made. In the first place there seems to have been a large increase in the quantity of A-licence work. On a comparison of the sample weeks this appears to be of the order of three-fifths to one-half. A number of factors may have combined to produce this. In the first place there have been increases in the number of larger haulage vehicles, those of 3 to 5 tons unladen weight increasing since September, 1952, by one-third and those of over 5 tons by over two-fifths. There has, however, been no increase in the total number of vehicles. Secondly, there has been an increase in the average carrying capacity of the vehicles of over 5 tons unladen weight. Thirdly there have been the other operating and ownership changes already referred to.

Effect of Trade Recession

The increase in C-licence traffic of very roughly one-fifth over 1952 is substantial but perhaps not as great as might have been expected. Part of the explanation may lie in the extent to which certain sectors of the economy which normally generate a large quantity of such traffic were suffering from slack trade during 1958.

A comparison of inland goods traffic in 1958 with that of 1952 (table III) shows that there was an increase of nearly 25 per cent in the quantity of goods carried by road. Road transport is estimated to have hauled 1,000 million tons of freight in 1958, the railways 260 million tons (including free hauled traffic), inland waterways 10 million tons, and coastal shipping 50 million tons. The railway figures for 1958 are depressed largely owing to the decline in iron and steel production and the fall in the consumption of coal. This has also reduced the total volume of inland goods traffic to a level little higher than that of 1952. "Nevertheless even when allowance is made for these special circumstances in 1958 it is clear that whatever unit of measurement is used road transport is now the major means of inland carriage of goods."

* The Transport of Goods by Road: Report of a Sample Survey made in April, 1958. (H.M.S.O. Price 1s. 9d.).

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LORRY—BUS—COACH

R.H.A. Girds Up to Meet an Election

IN accordance with its earlier intentions the Road Haulage Association is to change the emphasis of its present advertising campaign because of the feeling that a General Election is imminent. The present campaign, advertisements inserted in national dailies and magazines, is due to end in October, but to continue it will need more money than is at present available. The national chairman, Mr. R. N. Ingram, has appealed to all members to subscribe to the special fund for this purpose. It has so far reached £40,000 (plus £20,000 appropriated from R.H.A. funds). The target was £100,000. Mr. Ingram says hauliers have one last opportunity to assist in the final destruction of the nationalisation dogma.

Filmland Looks at Coaches

A FILM in the J. Arthur Rank series *Look At Life*, called *Talking of Coaches*, has been completed and is being shown throughout Britain. It gives generous publicity to the London Coastal Coaches Victoria Coach Station, associated companies coaches and to Blue Cars Continental tours, but it is not a sponsored film.

Shopping Centres Depend on Buses

TRADING at some of the larger supermarkets of the Express Dairy Co., Limited, suffered considerably as a result of the disastrous London bus strike of 1958, says Mr. W. A. Nell, company chairman, in his annual report. The falling-off in trade during the strike was very considerable; even with the resumption of buses a reduction in turnover continued and it has taken another six months to recover the business which was so seriously affected, he says. There are 21 supermarkets in the London and surrounding areas operated by a subsidiary, Premier Supermarkets, Limited, all within a reasonable delivery radius of a modern central warehouse at South Ruislip, Middlesex.

B.R.S. London Parcels Changes

EFFECT is now being given to the new parcels organisation of British Road Services (MODERN TRANSPORT, May 9) the primary purpose of which is to segregate London parcels traffic from provincial traffic. The headquarters for traffic collected and delivered in London is what is now termed the City and Suburban Parcels branch at 128 Goswell Road, E.C.1 (branch manager, Mr. J. Bickers), to which are attached Surbiton, Croydon, Eltham, Harrow, Stratford, Tottenham, Chelsea, Slough and High Wycombe depots. A North West London Parcels branch, at Coppetts Road, Muswell Hill, N.10 (branch manager, Mr. A. E. Wright), with Acton and Paddington depots attached, handles provincial traffic to or from that sector of London, the North East London Parcels branch, at Waterden Road, Stratford, E.15 (branch manager, Mr. J. Pullen), handles that sector, with the aid of depots at Seward Street, E.C.1, Epworth Street, E.C.2, and Welwyn Garden City; and South London provincial traffic is dealt with by the South London Parcels branch at Willow Walk, Bermondsey, S.E.1 (branch manager, Mr. J. W. Smith). The shipping branch continues unchanged at 59 Central Street, E.C.1, but its manager is now Mr. W. F. Munday.

Appeal on Smoking Ban

BELIEVED to be the first of its kind under the Road Traffic Act, 1930, an appeal was heard by Sir Maurice Holmes, as inspector for the Minister of Transport, by the Northern General Transport Co., Limited, and the Sunderland District Omnibus Co., Limited, against the decision of the Northern area Traffic Commissioners imposing a ban on smoking in the lower saloon of double-deck buses. The ban was imposed on representations from Durham County Council and the North-East Federation of Trades Councils.

At the appeal Mr. J. Lomas, for Durham County Council, said the company had contended that it could not cater for a minority of non-smokers, but it was vital to the conduct of public affairs that while the majority were catered for they should not be catered for to the complete exclusion of the minority. His authority had asked for the ban as part of its health education programme. Smoking on buses, he said, was really a matter of good manners, courtesy and common sense. So long as smoking was allowed everywhere there was no freedom of choice for others. For the companies, Mr. J. L. R. Croft contended that the commissioners' original decision had been against the weight of evidence and had been taken without due regard to certain submissions made. Much of the "evidence," he said, was merely expression of opinion. Northern General had found that 90 out of 100 workers wanted to smoke anywhere in the bus.

Manchester Hauliers Co-operative

SOME members of the North Western (Eastern) area of the R.H.A. have formed a company, Road Hauliers (Manchester), Limited, for the purposes of: (*a*) obtaining traffic, (*b*) interchanging traffic between members, (*c*) providing return loads for foreign-based vehicles visiting the Manchester area and (*d*) providing to trade and industry a fully comprehensive transport service. Shares in the company are available only to members of the R.H.A. on the basis of one share of £50 to each member with a limit initially of 200 shares. Most of the shares have already been provisionally allocated. The project has been described as a clearing house controlled by hauliers for the benefit of hauliers. The company intends to engage in all types of traffic, including long-distance, tipping, bulk liquids, etc. Mr. Harold Howarth, of Howarth Brothers (Royton), Limited, has been appointed manager.

Twin Mayrath screw conveyors discharging grain at York, from barge to Tamplin bulk tank on an Albion Reiver 10-ton lorry (see story on this page)

Grain Handling at York

YORK is now in a position to handle bulk grain over its wharves for the first time on record. Thanks to T. F. Wood and Co., Limited, warehouseman and canal carrier (and a member of the Transport Development Group), there will soon be a regular import of grain via Hull, 38 miles down the Ouse. The company expects to handle 20,000 tons in the first year's operation. Tests with light-wheeled screw conveyers have proved that it is possible to unload 40 tons of grain per hour, direct from barge to bulk-grain carrier, without involving any costly wharf installation. A high-capacity grain tank on a road vehicle was filled by two Mayrath screw conveyors, working in tandem, in 20 min. The first conveyor, a 21-ft. all-purpose model, lifted grain from the barge into a hopper on the wharf, while the second truck-loading conveyor raised the grain from the hopper into the bulk carrier.

The arrangement of the two conveyors, however, was purely for test purposes and it is planned to add a further conveyor so that the grain can be conveyed across the wharf and into the warehouse for immediate bagging ex craft. There are a number of advantages to be gained from sending bulk grain by barge to York from Hull. In the first place there are no dock landing charges, and in future grain will be loaded from barge to bulk carrier comparatively cheaply. Secondly, one bulk road carrier can handle four loads a day from York within a radius of 20 miles, whereas only one load could be transported from Hull, due to the distance and time taken in getting clear of the port. By using York, therefore, it will in future be possible to guarantee a constant supply of grain to an area within a 40-mile radius, an area which in recent years has seen rapid development in the broiler industry. The Mayrath screw conveyor is available from Gordon Felber and Co., Limited, Spirella House, Oxford Circus, London, W.1. The models tested were powered independently by a 5-h.p. electric motor, although petrol-engined alternatives are available. The motor drives a helical screw which conveys grain up the tube to the top where it empties by gravity into a hopper or truck.

Minor Change in London Fares

FROM August 23 London Transport road and rail fares of 6d. for three miles will be raised to 7d. This is the only step being taken at this juncture to employ the fare powers contained in the new B.T.C. passenger charges scheme which came into force on August 1. Early morning tickets will be discontinued from January 1, 1961. The prospective London Transport fares scale will be:

Miles	1	1½	2	3	4	5	6	7	8	9	10 etc.
Single fare	3d.	4d.	5d.	7d.	9d.	11d.	1/1	1/3	1/5	1/7	1/9

However, no date has been announced for the introduction of this scale, either in whole or in part, other than for 7d. fares as already indicated. Certain 6d. fares will remain unchanged in order to circumvent rebooking advantages, or where there is at present no 5d. fare and there would therefore be a jump from 4d. to 7d. In the Country Area 6d. fares will remain where there is participation by other bus operators.

Bus and Coach Developments

Bere Regis and District Motor Services applies for a Thursday service between Lillington and Sherborne.

Southern National Omnibus Co., Limited, proposes to link its Axminster—Bridport service with that from West Bay to Weymouth to form an Axminster—Weymouth route.

Two B.E.T. companies propose to consolidate operations by absorbing subsidiary coach companies. Southdown Motor Services, Limited, has taken over the licences of Triumph Coaches, Limited, Southsea, and Ribble Motor Services, Limited, seeks those of Auty's Tours, Limited, Bury.

Eastern Counties Omnibus Co., Limited, applies for new services between Great Yarmouth and Beccles via Belton, Fritton and Haddiscoe, and between Ipswich and Clacton. The latter would be jointly operated with Eastern National. That company applies for a Colchester—Ipswich service to be worked jointly with Eastern Counties.

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MC34

ECONOMICS OF BRITISH RAILWAYS

White Paper's Re-appraisal of Modernisation

FINANCIAL STABILITY IN 1963?

KEY section of the British Transport Commission's re-appraisal of the railway modernisation plan, issued during the printing stoppage as a White Paper, is the third part, dealing with the economics of modernisation and rationalisation. Leading up to this are two sections amplified by detailed appendices; the first deals with the achievements under the plan to the end of 1958, most of which have been recorded in these columns as they were accomplished, and the second discusses projects for the increased tempo of the next five years, to 1963.

Freight Prospects

Careful studies have been made of the levels of freight traffics likely to be carried by British Railways. For this purpose the Commission has drawn not only on the wide experience available to its own road and rail organisations from day to day contacts with trade and industry, but also on the experience of many users of all forms of goods transport. In particular there have been discussions in regard to likely total traffics with the National Coal Board, the Central Electricity Generating Board, the Gas Council, the Iron and Steel Board and the British Iron and Steel Federation. Consultations have taken place with the Federation of British Industries, the National Union of Manufacturers and the Association of British Chambers of Commerce, covering in particular the future pattern of the railways in the light of expected economic requirements. The F.B.I. agrees with the statement made in the plan of 1954 that "an efficient and modernised railway system is essential to the economy of the country," and that the railway system of the future should be smaller than it is now while capable of dealing efficiently with a larger volume of traffic. The other two bodies believe that traffic can be attracted under the plan.

Coal has always been one of the most important traffics for the railways, just as it has been essential to the coal industry to have railways to carry it. In 1957 the 167 million tons of coal and coke carried by the railways accounted for 61 per cent of the revenue earning tonnage carried by freight train and 36 per cent of the freight traffic receipts by both freight and coaching train. Since the war the level of railway carryings has largely been determined by the output from the mines, but more recently it has depended on demand. Oil has been replacing coal on an increasing scale. The movement of liquid fuels in bulk is, however, a traffic for which rail transport is particularly suitable, and B.R. expects to obtain its share of new business from this source. Other likely changes are that electricity generating stations and coke-oven plants will consume more coal, but that less coal will be used by gasworks, the iron and steel industry (except for coking) and other manufacturing industries. A reduction in domestic use is also expected.

Coal and Steel

In 1957, coal production was 224 million tons, falling to 216 million tons in 1958. Home consumption and exports (which, rather than production, very largely determine the volume of coal transport required) were 221 million tons in 1957 and 208 million tons in 1958. Home consumption in 1963 must be expected to be below 1957 but may not be much below 1958. Exports in 1958 were at a low level and an increase seems more likely than a further fall. In the absence of more positive information. the total of home consumption and exports in 1963 has, for the purpose of this reassessment, been put by the Commission at between 200 and 210 million tons. Changes in use and distribution of coal are tending to reduce the average length of haul by rail, but the share of the total tonnage offering which is carried by rail is increasing and may improve further. On balance, gross receipts from coal class traffic are forecast to be lower in 1963 than in 1957.

The category of traffic described as minerals is also one where the railways have done the bulk of the regular carrying for many years. The 65 million tons of the minerals traffics carried in 1957 accounted for 24 per cent of the total tonnage carried by freight train and 15 per cent of freight traffic receipts. The major influence on minerals traffics is the level of output in the iron and steel industry. In 1957 two-thirds of the tonnage in the minerals classes was accounted for by the raw materials and intermediate products of the iron and steel industry, mainly iron ore, limestone, pig iron, iron and steel scrap and semi-finished steel. A substantial growth in the productive capacity of the iron and steel industry is planned for 1963 and the industry expects a further growth subsequently. In the light of the discussions, already referred to, with national organisations in the iron and steel industry, the Commission's traffic forecasts assume that the 1963 output of steel will be about 27 to 28 million ingot tons, compared with 21.7 million ingot tons in 1957. The railways are well equipped to carry the traffics of the steel industry and a modest but continuing increase in revenue from this source is expected. Carryings of other traffics in the minerals category, which include bricks, gravel, sand, road materials and other heavy commodities carried loose for the building industry, for agriculture and for a number of other industries, have remained in total fairly stable in recent years. It is not expected that in the next few years there will be any significant change.

General Merchandise

The position as regards general merchandise traffics is more complex and much more difficult to assess. Within the 42 million tons of general merchandise traffics which earned the railways £119 million in 1957 there is a very wide range of traffics. There are regular and important flows such as the movement of the various types of finished steel products, the distribution of fuel and other oils, the movement of sugar, vegetables, grain, drink and tobacco, timber, paper, raw wool, heavy chemicals and cement. On the other hand, traffic in many other commodities, though large in aggregate, is mainly consigned in small individual quantities from thousands of stations and sidings, often being collected or delivered by railway road services. In total these railway traffics accounted for 15 per cent of freight train tonnages but brought in 34 per cent of total freight revenues in 1957.

Substantial expansion is expected in a number of major industries and the railways expect to obtain a full share of the additional traffics. The developments planned in the railway services will ensure that traffics can be carried promptly and efficiently. Extended use of containers and the development of improved means of transferring loads between road and rail are being vigorously pursued. Better service to the customer and the very real benefits expected to flow from the refashioned commercial organisation are beginning to arrest the decline in general merchandise traffics. The railways will aim by the quality and price of services and by commercial policies to meet road competition. The Commission expects that, if the assumed increase in general economic activity materialises, the railways will by 1963 carry a greater tonnage of general merchandise than in 1957. Full advantage will be taken of the flexibility in charging for freight traffics which is available under the 1957 Merchandise Charges Scheme and these powers will be used both to secure suitable traffics by quoting competitive rates and to make special arrangements with traders wherever opportunities arise. The increased ability to offer a variety of throughout transport services by road and rail will also be an important advantage.

Charging Policy

Since charging policy will be used to encourage customers to offer larger and more regular consignments and to discourage some traffics for which rail is inevitably expensive, it must be assumed that, on average, the receipts per ton-mile for general merchandise will be somewhat lower and little change in gross receipts is expected, notwithstanding the increased carryings which are forecast. Revenue from parcels, mails and other merchandise by coaching train has grown steadily over recent years and in 1957 provided 15 per cent of total freight revenues. Helped by the growing mail order business and the new network of parcels depots and connecting services to be provided by the railways, a continuation of this growth is expected.

The increases expected between 1957 and 1963 in minerals traffic and in merchandise by coaching train should offset the expected fall in coal traffics. Since no important change is looked for in the general level of merchandise traffics, freight receipts in the aggregate are expected to be at much the same level in 1963 as they were in 1957, and the sharp fall in gross receipts of the railway freight services which occurred last year should be made good.

Passenger Traffic

Despite road and air competition passenger journeys on British Railways in 1957 totalled no fewer than 1,100 million, 7½ per cent more than in 1948. Passenger-miles were 22,600 million, also 7½ per cent more than in 1948. Passenger receipts were £139 million, 13 per cent more than in 1948. But there is no doubt that the passenger services are making a wholly inadequate contribution to the expenses, such as track and signalling, which are largely incurred jointly with the freight services. In the days when the railways enjoyed a virtual monopoly of freight traffic they could perhaps afford a lower return from their passenger traffic. Now that the position of the freight traffics is keenly competitive it is essential that the passenger traffics should make their full and proper contribution.

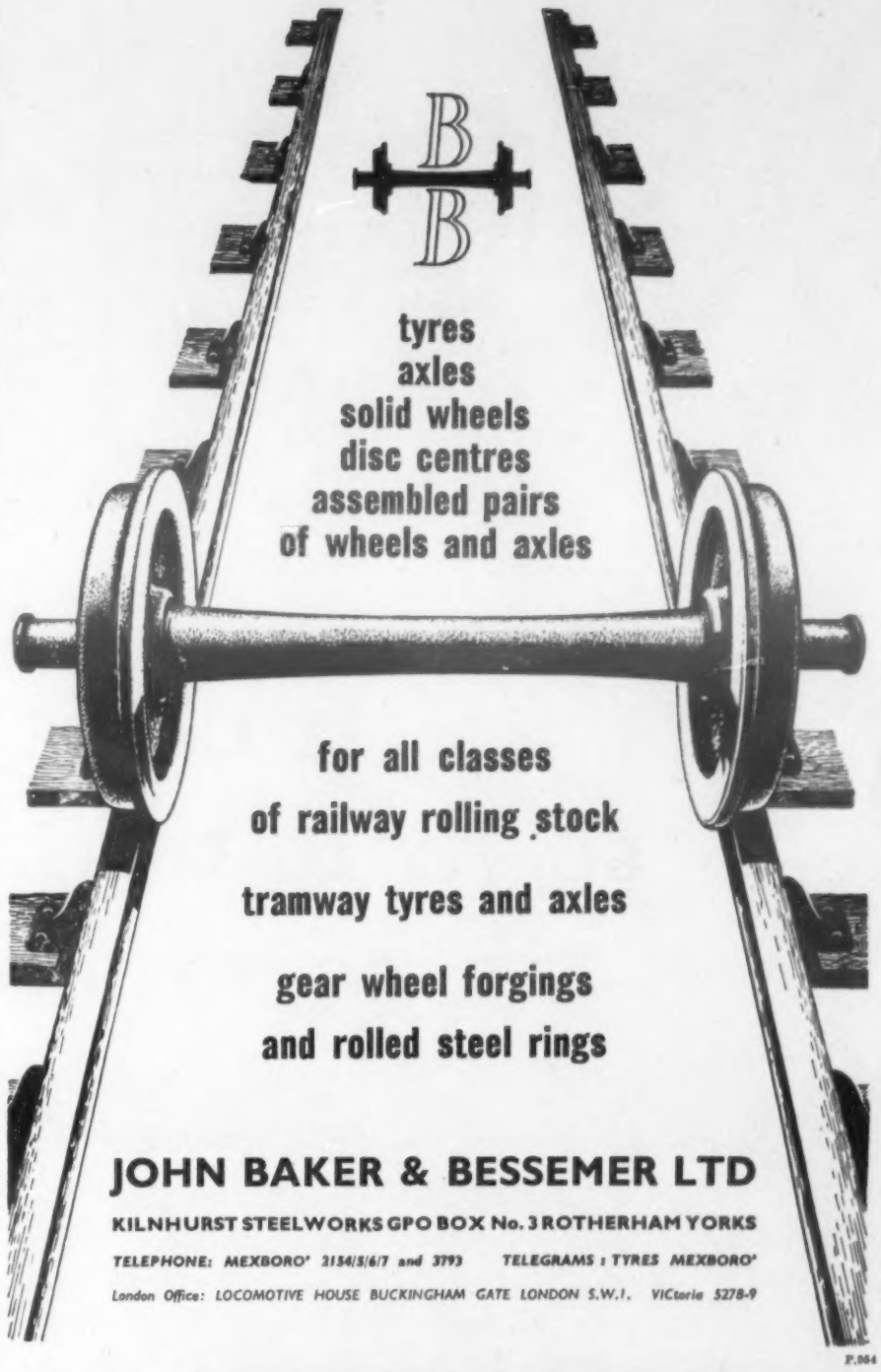
The economic position of the fast main-line services between important centres is in general satisfactory. It is the stopping services on the main lines and branch lines and the intensive suburban services around London and other major cities which present a problem financially. In the case of stopping services, the introduction in the past few years of diesel multiple-unit services on an increasing scale has shown considerable benefits, both in increased receipts and reduced expenses. Even so, some of the services concerned are still failing to cover the direct expenses incurred in their operation or are making too small a contribution towards the expenses of providing the stations, track and signalling. The process of curtailing lightly loaded passenger services will be carried much further and it is expected that the passenger train-miles on the stopping services will be reduced to a substantial extent over the next five years. On the other hand, the volume of electric and diesel services on the main lines and in the suburban areas will increase, so that on balance little change in total passenger train-miles operated is forecast. By 1963 more than three-quarters of the passenger train-mileage is likely to be operated by electric or diesel traction, leaving less than one-quarter to be steam-locomotive hauled.

Working Expenses

In 1957 working expenses of British Railways totalled £529 million, including £60 million for train crews, £73 million for fuel and power, £111 million for rolling stock (repairs and depreciation), £32 million for rolling stock (cleaning and lubricating), £59 million for stations and goods depot staff, £36 million for signalling operation and maintenance and £85 million for maintenance of track, tunnels, bridges and stations. Some two-thirds of the total expenses are wages and other staff costs. The number of staff employed at the end of 1957 totalled 573,000. By the end of 1958 the staff figure had fallen to 550,000 while the total working expenses in 1958 had been reduced to £520 million notwithstanding increases in wage rates and price levels estimated to have cost about £13 million.

Major economies can be expected in freight operation. Many wayside stations and private sidings which deal individually with small quantities of traffic will be closed. Freight will then be concentrated on a considerably reduced number of terminals, strategically placed both in relation to the area to be served and the main rail arteries. This process has already been partly accomplished for small consignments and it will be extended and applied particularly to wagon load merchandise traffic and domestic coal. There are difficulties to overcome before the full benefits of this policy can be reaped. In the case of general merchandise it is intended to make greater use of road services in order to expand the area served by a compact railway network, and development of speedy and cheap methods of load transfer has become of great importance. Concentration of domestic coal traffic at a smaller number of destination stations also presents difficulties which have been discussed with representatives of the coal traders.

(*Continued on page* 13)



P.984

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TYRES AND MOTORWAYS

Effects of Sustained High-Speed Running

Because of its importance to commercial vehicle operators who plan to make use of Britain's first long motorway, due to be opened this autumn, we reproduce in full a memorandum issued by the Tyre Manufacturers' Conference, 9 Whitehall, London, S.W.1, on the effects of sustained high-speed running on tyres and the suitability of current tyres for motorway operation.

WHEN it became known that the new motorways were to be free from speed limitation, speculation arose as to the ability of the commercial vehicle and its components to take advantage of this new freedom; in particular, interest centred on tyres. Fortunately, tyre manufacturers have in their possession an accumulation of knowledge based on indoor and outdoor testing, and the use of tyres on the fast roads of Europe and the U.S.A. Tyres can, therefore, be made to suit any reasonable condition and the problem is not one of knowing how to meet any given circumstance, but to know what the conditions are likely to be. Tyre manufacturers are, therefore, planning to match the maximum speed of which any vehicle which uses these roads is capable.

The destructive factor which has to be guarded against in the use of tyres at speed is heat degradation, and this may increase the destructive effect of high running speed in the ratio of the square or even the cube of the speed. Heat may be built up in the three following ways: (*a*) Braking; (*b*) friction between tread and road; and (*c*) internal heat generated through continual flexing of the carcase.

Braking Not a Likely Factor

Braking is not likely to be a factor in long runs on the motorways. Friction with the road surface is not so important as might be thought, although some reduction in mileage must be expected with higher speed. The throwing of tyre treads which is often assumed to be due to centrifugal force is more often one of the results of heat being built up inside the tyre as each portion of it flexes every revolution as it comes in contact with the ground. This heat build up will obviously increase as the tyre deflection becomes greater (for example, by overload or underinflation); as the number of revolutions becomes higher (that is, with speed); and with the thickness of the tyre. Hence for fast speed conditions large-section tyres operating within their load capacity and correctly inflated are to be preferred to the equivalent smaller tyres of higher ply ratings. Nobody need be concerned at an occasional short run at speed for say 20 miles. It is long runs at sustained high speeds which can cause serious heat build up. This either reduces the strength of the carcase or destroys the adhesion between it and the surrounding rubber. Damage may not be apparent immediately but may lead to the tyre blowing out some time later, even when it is either stationary or moving at slow speed. It cannot be over-emphasised that tyres in poor condition or badly worn are unsuitable for high-speed work.

The practical effects of the above upon the tyres to be recommended for these new conditions are that no change is considered necessary in the construction or conditions of service for tyres for commercial (goods) vehicles. In the case of public service vehicles, tyres with extra heavy tread construction, almost the exclusive province of this country, would be undesirable for the continuous high speeds on the new motorways. Tyres offered by the manufacturers for this fast service will either be identical to, or very similar to conventional tyres; thus there may be no distinction in tyres for commercial vehicles and public service vehicles.

Fast speeds focus attention upon two other requirements, namely the suitability and condition of wheels and freedom from excessive out-of-balance of tyre and wheel assemblies.

★

POWER TOOL ATTACHMENT

Surcut Surfacing and Cutting Disc

A NEW range of surfacing and cutting tools has been introduced under the name Surcut by the Surform division of Simmonds Aerocessories, Limited, a member of the Firth Cleveland Group. The first Surcut tool is a 5-in. diameter perforated cutting disc attachment for power tools. It cleans and smoothes wood block or boarded floors and decking and, without clogging, removes paint and varnish. It will shape most materials in common use, achieving a remarkably good finish. The Surcut cutting disc has been approved by all leading power tool manufacturers. The complete kit is in three parts—a cutter, a back plate and a universal adaptor, allowing the cutter to be used on any portable electric drill.

The Surcut 5-in. cutting disc, which is supplied with a universal attachment to suit all power tools

The cutter is a disc of hardened and tempered steel with 108 teeth so arranged in tangential lines of three teeth that the disc will cut right up to its perimeter. There is a clearance hole in the front of each tooth through which swarf can pass to the back of the disc, from whence it is automatically cleared. Swarf so cleared is discharged away from the operator. The complete kit costs 17s. 6d. and replacement cutting discs 11s. 6d.

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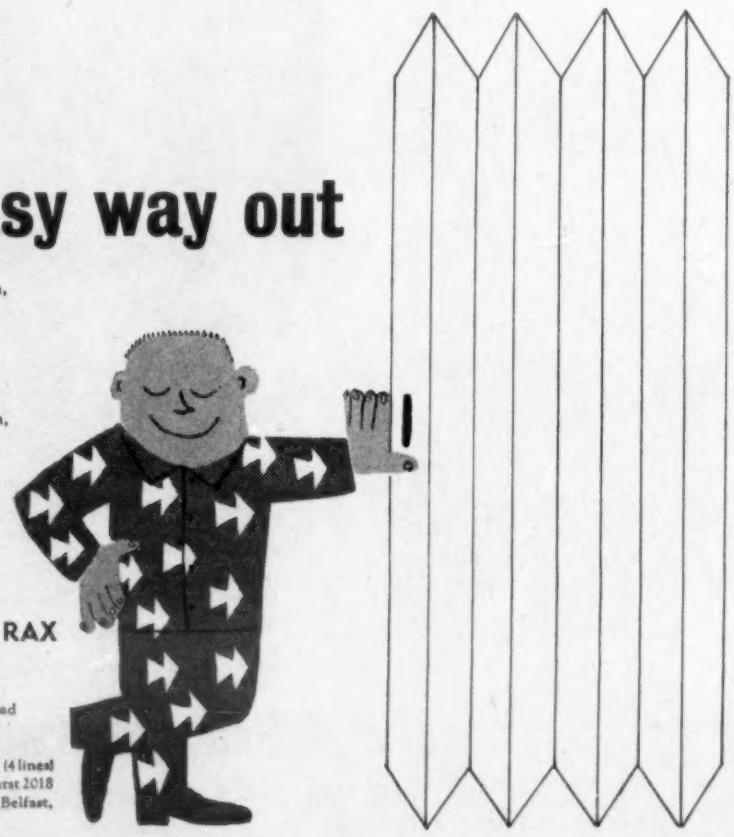

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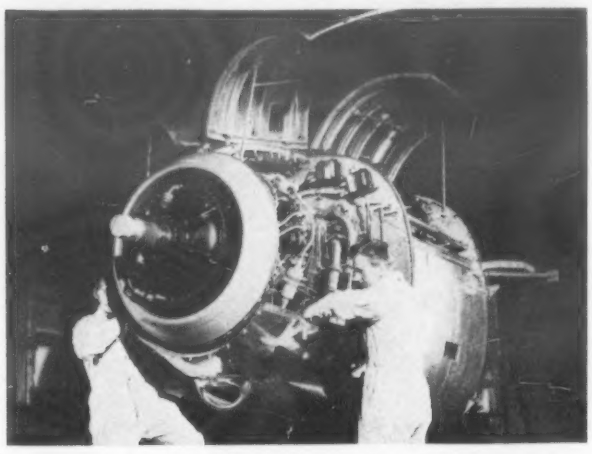
Extending the Convair Capabilities

USE OF NAPIER ELAND TURBOPROP

MUCH has recently been said regarding the need to bring down air fares to levels at which they could be expected to attract very substantial quantities of new traffic indeed. There has been support for this idea from some airlines, but there can be little doubt that one of the main reasons for the reluctance of the majority lies in the cost of new equipment. Prices of aircraft have risen steadily and steeply and many operators find it hard to envisage sufficient earnings at low rates to meet the calls on their purse, even if the aircraft actually used for the low-price services are those which stand at a small figure in the books.



Completing a Napier Eland prior to shipment for installation in a Canadair CL66 (540) for the R.C.A.F.

It could be argued that there should have been less precipitancy in ordering new aircraft but that it is to ignore the problem of competition when other operators are introducing new types of aircraft on their routes. Alternative approaches are few but one of singular ingenuity and, moreover, with great attractions was evolved by D. Napier and Son, Limited, around the potentialities of the Eland turboprop engine which had been designed particularly for use on short-stage services. The scheme was for the conversion of the widely used Convair 340 and 440 by replacing the two Pratt and Whitney piston engines with two Napier Elands. A subsequent variant developed was the transfer to Canadair of the Convair production line—both firms are divisions of the General Dynamics Corporation. As a result there has become available the Canadair-Convair 540 which is a new aircraft built on the jigs of the 440 and fitted with Eland engines. The designation 540 applies both to new and converted aircraft but the former bear the name Canadair.

Canadair 540

The Canadair 540 has been ordered by the Royal Canadian Air Force and examples have toured both North and South America as well as Western Europe. One of the demonstrators has since been hired to Allegheny Airlines in order that that operator may judge the suitability of turboprop-engined aircraft on its short stage routes, while the manufacturer gets the value of regular operational experience. The demonstrator which has been touring Western Europe is, in fact, a Convair 340 converted by Napier and before it commenced this programme we were able to participate in a demonstration flight from Gatwick.

It was possible only to gain some general impressions of the aircraft, as circumstances precluded the simulation of actual operating conditions on a service with short sectors and we maintained an altitude which was admirably suited to seeing Sussex and the Solent from the air. The Convair is a comfortable aircraft with its two-and-two seating and this has undoubtedly been a contributor to its ability largely to hold its ground in competition with turboprop rivals. The noise level inside the aircraft was very reasonable although it seemed to us to be a little more obtrusive when cruising than in, for example, the Fokker Friendship. On the other hand the engines in the 540 are, of course, more powerful. The take-off was quick and the rate of climb certainly went to show that the claimed performance of 2,360 ft. per min. was well justified.

Increased Capacity

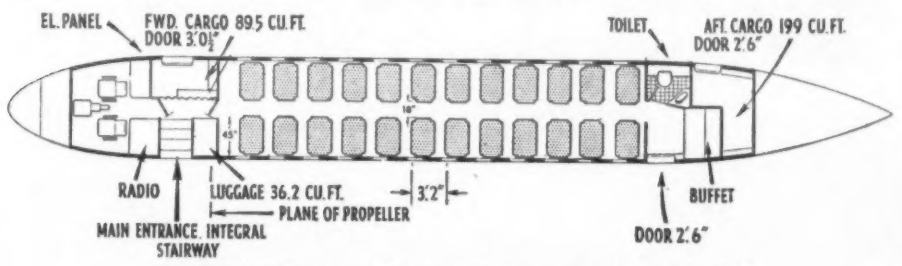
Compared with the 340 and the 440 the 540 has an increased all-up weight at 53,200 lb. against 47,000 and 49,100 lb. respectively while its seating capacity of from 48 to 58 according to whether first-class or high density arrangements are adopted may be set against the 44 seats in the older versions. The turbine-powered machine also scores when it comes to the question of range. With capacity payload of 11,350 lb. the 340 has a range of 379 and the 440 one of 455 nautical miles and a cruising speed of 210 knots. The 540 with a payload of 11,700 lb. as a 48-seater or 11,230 lb. as a 58-seater cruises at 276 knots and has respective ranges of 665 and 725 nautical miles.

As might be expected a good deal of work has been done to relate the operating costs of the 540 with those of the 440 and it has been found that the direct operating cost per hour of the former on a stage distance of 200 nautical miles is $182.79 (£77 8s. 6d.) as against $157.57 (£56 5s. 6d.). At first sight this seems bad for the new version, but when it is realised that its block speed is 221 knots, compared with 176 knots, it will be appreciated that the cost per nautical mile of the 540 works out at 82.7 cents (6s.) whereas that of the 440 comes to 89.6 cents (6s. 5d.). When these figures are related in turn to seating capacity the 440 with its 44 seats gives a cost per seat-mile of 2.04 cents (1¾d.) while the 48-seat version of the 540 amounts to 1.72 cents (1⅝d.) and the 58-seat version to 1.43 cents (1 1/5d.).

Few Limitations

A particular advantage claimed for the 540 is that it has virtually no space or weight limitations over short-haul sectors and that it can carry all the fuel needed for the whole route. This allows the alternatives of a range of 1,100 miles or a route on which, perhaps, six stops are made without involving refuelling. This can contribute markedly to reducing ground time at the stops which, coupled with the higher cruising speed available, offers the possibility of reducing journey times on local services—an attractive thought for operators thereof.

The take-off performance of the 540 has already been mentioned briefly in connection with the demonstration flight and this is another factor of great importance in operating short-stage routes, since these often use airports which are rather small. The maximum take-off distance required by the aircraft for take-off is 4,550 ft. and this, in fact, is needed only when operating with the full passenger payload over distances exceeding 650 miles in the case of the 48-seat version or 700 miles for the 58-seater. It compares, moreover, with the 5,120 ft. needed by the 440 at 4,100 lb. less all-up weight. Yet another feature bearing particularly upon short-haul operations is the basic design of the Eland engine. It was conceived as a unit which could be maintained with normal airline facilities in a particularly short time and which could also, if necessary, be repaired quickly.



Layout of the Convair 540 when 48 first-class seats are installed

The Canadair Convair 540 with Napier Eland engines

The motor vessel *Somers Isle*, built by Harland and Wolff, Limited, Belfast, and owned by the Pacific Steam Navigation Company, has been fitted with a Pyrene combined smoke detecting-CO_2 fire-extinguishing installation, for the protection of all 10 cargo spaces.

The organisers of the Feltham Fund for the preservation of one of the Feltham type trams built by the London Underground Group, some of which are still in the Leeds tramcar fleet, have made an arrangement for the car to be operational on the track the Tramway Museum Society is proposing to lay at Crich, Derbyshire. The address of the fund is 25 Kempshott Road, London, S.W.16.

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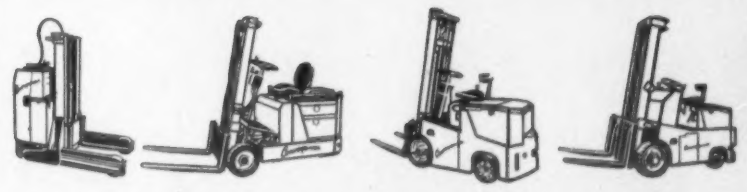

RE2-24 RE3-24 E2-20 E3-20 E4-20 E45-20 E6-24

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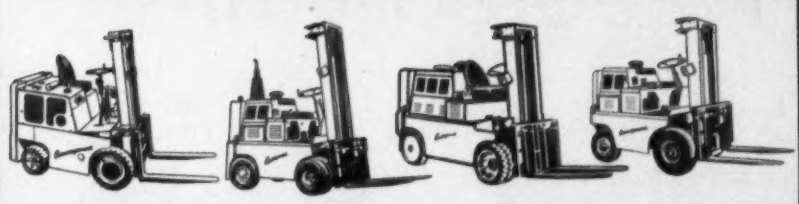

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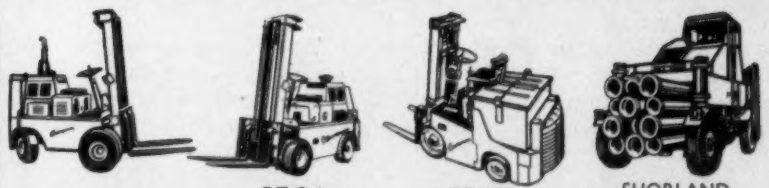

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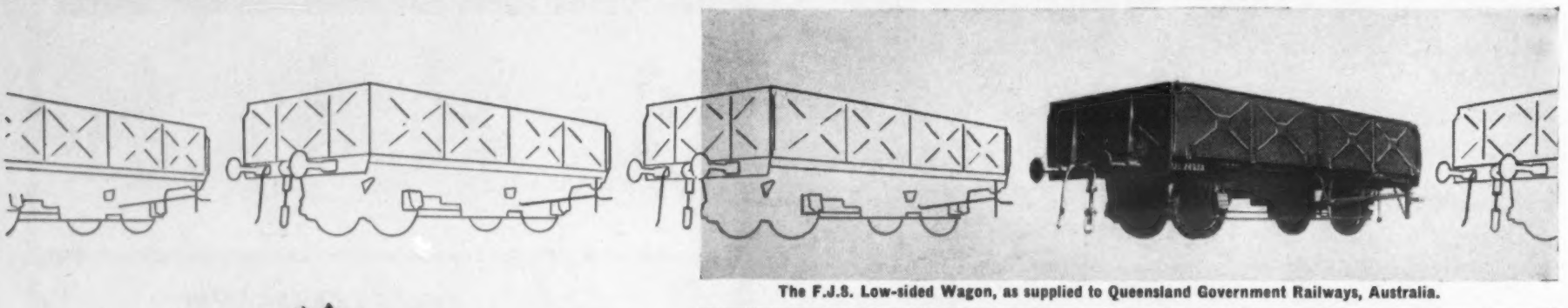

The F.J.S. Low-sided Wagon, as supplied to Queensland Government Railways, Australia.

The 20-ton Bulk Grain Van, used by British Railways.

A capacity of 1,400,000 tons

THE CARRYING CAPACITY of the rolling stock produced by Pressed Steel in the past eight years adds up to 1,400,000 tons. This figure is made up of carriages and wagons of all types, for all gauges, at home and overseas. You see some of this rolling stock here.

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The F.D. Louvre Van, used by Western Australian Railways.

British Railways 57-foot Utility Van.

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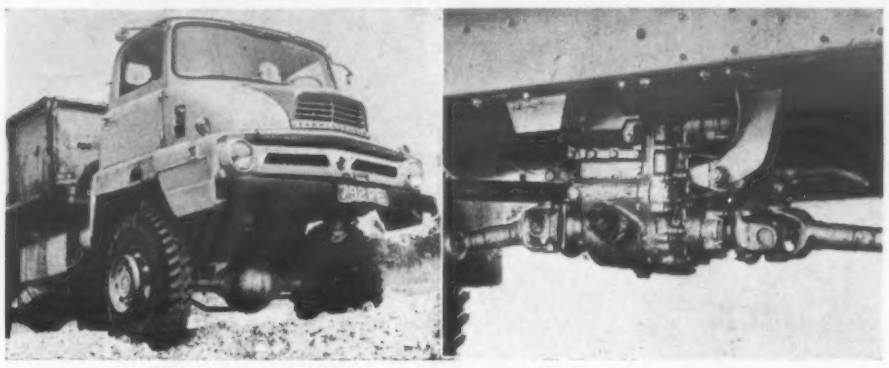
TRADER RANGE EXTENDED

Appraisal of Four-by-Four 7-Tonner

ALL WHEEL DRIVE CONVERSION

SINCE its introduction by Ford Motor Co., Limited, in May, 1957, the 7-ton capacity Thames Trader has proved itself to be a robust straightforward design capable of sustained service in tough types of operation. Its range of usefulness has now been extended to cover operation in severe off-road conditions where rear-wheel drive alone would prove inadequate. Co-operation between Ford Motor Company and All Wheel Drive, Limited, York Town Works, Camberley, Surrey, provides a four-wheel-drive 7-ton Trader, with an auxiliary range of gears. Unlike a number of previous front-drive and third-axle conversions of Ford vehicles, All Wheel Drive conversions are sold and serviced through official Ford dealers at home and abroad.

The four-wheel-drive Trader is available in the three standard wheelbase lengths—108, 138 and 160 in.—and with either the Ford 100-b.h.p. (net) 6D diesel or 110-b.h.p. six-cylinder petrol engine. A maximum number of standard components and units is retained; these include the 12-in. semi-centrifugal hydraulically released clutch, four-speed synchromesh main gearbox, fully floating hypoid rear axle with optional 6.167, 6.8 or 7.2 to 1 reduction, vacuum-assisted hydraulic brakes and flexibly mounted steel cab.



Close-up shots of the driven front axle and, right, of the A.W.D. auxiliary gearbox and its mounting arrangements

All Wheel Drive Items

Standard Trader parts removed for the purpose of conversion are the front axle, front spring brackets, front spring dampers, propeller shaft and centre bearing and cab centre floorplate. All Wheel Drive parts added are an auxiliary gearbox, front driven axle, new front spring brackets and dampers all round, three propeller shafts, speedometer correction gears and a new cab centre floorplate. Standard frame sidemembers are used after modification by A.W.D. Some items used in the conversion embody standard Ford parts and all are available only through official Ford dealers.

The A.W.D. two-speed auxiliary gearbox provides direct drive and a 2.105 to 1 reduction through spur and single-helical gear trains. Front-wheel drive is engaged by a spring-loaded internally toothed sliding clutch controlled by a separate lever, so that it can be used with the high range of gears and can also be engaged quietly while the vehicle is on the move. A loading mechanism prevents the engagement of low auxiliary unless four-wheel-drive is already engaged, thus avoiding the possibility of putting too high a torque multiplication through the rear axle alone. Provided an interlock of this type is fitted, it has always seemed to us advantageous to have separate controls for front-wheel drive and auxiliary gearchange rather than one lever controlling both motions. There are many occasions when front drive can restore traction without the low range which, once engaged, is difficult to disengage without coming to rest again, particularly in heavy muck.

Power Take-Off

The A.W.D. gearbox also shows commendable attention to design in the matter of provision for the optional power take-off. This unit has a direct ratio and a built-in lubricating oil pump; it will take full torque through all main gear ratios and can also be engaged while the vehicle is on the move. The design gains full marks for versatility in positioning in that three identical facings are accurately machined on the auxiliary box casing—one on top and one on each side—on any one of which the take-off unit can be fitted facing in either direction without shims; thus six possible take-off positions are provided. Tapered roller bearings are fitted throughout the box.

Three open tubular propeller shafts, between the main and auxiliary gearboxes and from the auxiliary box to front and rear axles respectively, are all fitted with Hardy Spicer 1500-series needle-roller-bearing universal joints. The front axle has an identical Ford differential and hypoid driving gear with that of the rear axle and the constant-velocity universal joints and half-shaft bearings run in oil baths formed in the axle tubes and by the steering knuckles.

Tyre Equipment

Standard equipment includes 9.00-20 10-ply rating tyres, with twins at the rear, on two-piece wide-base-rim wheels. Three-piece wheels are available optionally at extra cost and tyre options include 9.00-20 12-ply (twin rear), and 11.00-20 or 12.00-20 14-ply, single all round. Maximum gross vehicle weight is 8 tons 10 cwt. across country and 10 tons 11 cwt. on good road with twin rear tyres. With single rear tyres maximum weight is limited to 8 tons 10 cwt. for cross-country or road operation for the two longer-wheelbase chassis and to 7 tons 12 cwt. for the short-wheelbase chassis. Tare weight of chassis and cab varies between about 3 tons 4 cwt. and 3 tons 8 cwt., depending on whether petrol or diesel engine is fitted, wheelbase length and tyre equipment. In practice, with an average steel body on the diesel-engined long-wheelbase chassis fitted with 9.00-20 12-ply tyres, the maximum-weight ratings permit a 4¼-ton payload across country and a 6¼-ton payload on the road.

Alpine and Colonial Running

We recently had an opportunity of handling one of the vehicles and obtained permission to take it over the Alpine and colonial courses of the military vehicle proving ground at Bagshot Heath. The accompanying illustrations give some idea of the punishing nature of the going and in fact of the conditions for which the four-by-four Trader has been developed, for much of its testing has been undertaken here and at the Fighting Vehicles Research and Development Establishment proving ground at Chobham.

The vehicle provided for our run was a diesel-engined 138-in. wheelbase chassis on 9.00-20 12-ply tyres, fitted with an open steel lorry body and loaded to a gross weight of 8 tons 1 cwt. The crew brought the running weight up to about 8¼ tons. The loaded front axle weight of just under 2¾ tons showed equitable sharing of the load between the two axles with twin rear tyres. The additional fittings appeared to have no adverse effects on road performance or handling qualities, which seemed in every respect fully up to those of the standard Trader. Steering proved light and accurate from low-speed manoeuvring right up to the recorded top speed of 45 m.p.h. available with the standard 6.8 to 1 axle ratio. A feature marked during the road run was the quiet operation of the auxiliary gearbox, which was quite free from gear whine. Little restriction of manoeuvrability has been made in the driven front axle, the 52-ft. diameter wheel-track turning circle being moderate for a 138-in. wheelbase chassis.

Above, taking a shallow watersplash at speed and, right, breasting a loose-surfaced 1 in 3 gradient; the two shots below show the type of racking that the four-by-four Trader has been subjected to extensively during its development

Pleasant Handling

For the Bagshot Heath Alpine circuit, which consists principally of rutted loose stone-surfaced gradients of varying severity up to about 1 in 2½ and a few unsurfaced fairly level sections, front drive and low range were engaged from the start. The Trader proved to have very light handling characteristics in this type of going and provided flexible performance, covering most of the course in third or top gear at between 12 and its maximum speed of 20 m.p.h. in auxiliary range. First gear, which provides a maximum gradient ability fully laden of about 1 in 2, was required on only two occasions—to complete the climb of a slope rather steeper than 1 in 3 on which deep ruts had frustrated a fast approach and in making a trial restart on a similar gradient, which was easily accomplished.

The colonial circuit is mainly flat and in its natural heathland condition, with almost con-

(*Continued on page* 12)

For the Kent Coast Electrification Scheme

SKF SPHERICAL ROLLER BEARING AXLEBOXES

Electric locomotives of a new design are being put into service shortly by the Southern Region of British Railways. Having an hourly rating of 2552 h.p. and a maximum speed of 90 m.p.h., they will haul heavy passenger and freight trains on the South Eastern Division.

Illustrated below is the first of these locomotives, built at the Doncaster Works of British Railways. An interesting feature of these locomotives is the SLM suspension fitted with SKF self-aligning roller bearing axleboxes—a system widely used on the Continent, the self-aligning properties of the SKF spherical roller bearings making a decisive contribution to its success.

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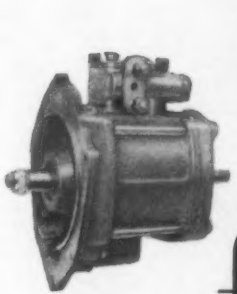

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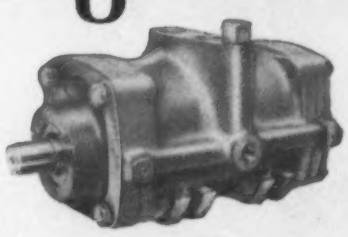

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Recently introduced, the new version of this famous 7-tonner even outstrips its earlier model. Power, payload and transmission are stepped up, it has the very latest style in cabs —and yet the price is lower than ever.

No, there's little hope that servicing the Chieftain will ever prove lucrative. But for the operator, the dealer and—let's be frank—for ourselves, the Chieftain will prove a gilt-edged investment for years to come.

The Albion 7-ton CHIEFTAIN

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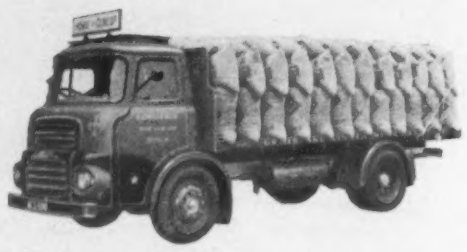

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NEWS FROM ALL QUARTERS

Stations Closing

From September 14 the following North Eastern Region stations will be closed to passenger-train service: Monk Fryston, Lockington, Hambleton, Burton Salmon, Pickhill, Sherburn Colliery, Baldersby and Topcliffe. The Melmerby—Thirsk and Greetland—Stainland lines will be closed.

A Step Nearer Vehicle Testing

The Minister of Transport has made a commencement order which brings into force, on September 15, section 1 of the Road Traffic Act, 1956. This gives him the power to make the necessary regulations under which vehicle testing stations can be set up. The regulations will also deal with the scope of the test and the way in which the examinations are to be carried out. Later the Minister will make further orders bringing section 2 (obligatory test certificates) into operation.

Vehicle Restriction on Alpine Pass

Heavy commercial vehicles hauling trailers are now prohibited from using the Gotthard Pass except very early and late in the day. New regulations are aimed at preventing further obstruction of car and tourist traffic and to alleviate congestion on the section of the road between Amsteg and Göschenen where many narrow stretches and sharp bends still exist. There is an all-day ban on Saturday in addition to the national prohibition of commercial vehicle traffic on Sunday.

London Peak-Hour Travel Census

A census taken by London Transport in November, 1958, proved that peak-hour travel into and out of Central London by London Transport and main-line rail services was then still increasing. During the period of the census an estimated 1,148,000 passengers entered Central London during the morning peak, 4,400 more than a year earlier. It is stated that the spread is a little wider, more people travelling between 9.15 and 10 a.m., but the evening peak was as intense as ever. Between 7 and 10 a.m. British Railways brought in 440,600, the Underground 474,000 and buses and trolley-buses 233,800. In the evening, between 4.30 and 7 p.m., the corresponding figures outwards were 385,800, 452,700 and 208,100.

Glasgow Transport Loss

Glasgow Corporation Transport Department suffered a deficit of over £200,000 for the financial year ended May 31, 1959. It is estimated that in the present year the deficit will be £100,000. The estimated deficit for the whole department last year was £621,000, but by drawing on the depreciation fund for the replacement of tramcars, the final figure was reduced to a little over £200,000. This deficit is accounted for entirely by the tramways section. Increased fares on all the services were introduced on May 31 this year. These are likely to bring in a revenue of about £580,000, which is £250,000 less than the undertaking had hoped for in its application to the traffic commissioners. It was sought to abolish the 4d. bus fare and charge 5d. for three stages, but this was rejected by the commissioners. That cost £100,000 in lost revenue.

New Peterborough Station

Plans have been finalised for a new and enlarged passenger station at Peterborough (North), which will provide the most modern facilities for passenger, parcels and mail traffic and the realignment of tracks to permit of much higher speeds through the station where there is, at present, a 20-m.p.h. speed restriction.

Progress on New Autobahns in Germany

Since 1955, when the first postwar autobahn building programme was inaugurated by the West German Government, involving 420 miles of autobahn, more than 180 miles of road have been completed. By spring, 1960, the length will have reached 245 miles, and by the end of 1960 the total length will amount to 380 miles. Of the second building programme, which envisages the building of approximately 410 miles, nearly 80 miles have already been concluded. It is hoped that by 1960 and thereafter the construction will reach a length of 125 miles annually.

Fast Trains with Fertiliser Traffic

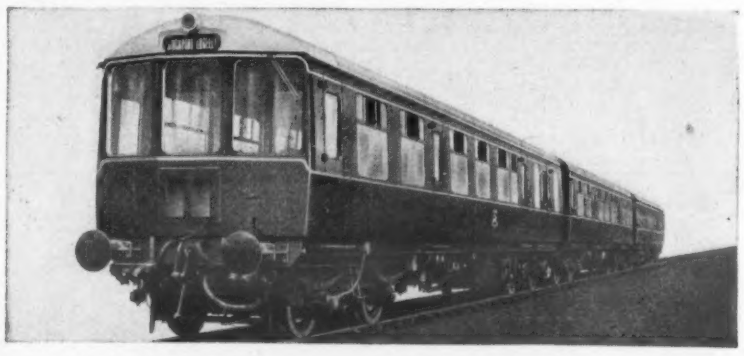
This year spring fertiliser traffic from the Imperial Chemical Industries Billingham factory produced a record delivery to the home market during the first three months of the year—200,000 tons, 50,000 more than in 1958 and a record delivery speed up by rail. Train loads of around 300 tons reached distant destinations in the West Country and the South within 24 hours of leaving the factory. The North Eastern Region, with I.C.I., organised an intensive programme of 50 m.p.h. express freight trains with continuous vacuum braking. The fertiliser season reaches its high peak during the first three months of the year and in this period no less than 312 special trains kept farmers supplied. On some days as many as eight left Billingham. Previously wagons sorted in the ordinary way took several days to destination.

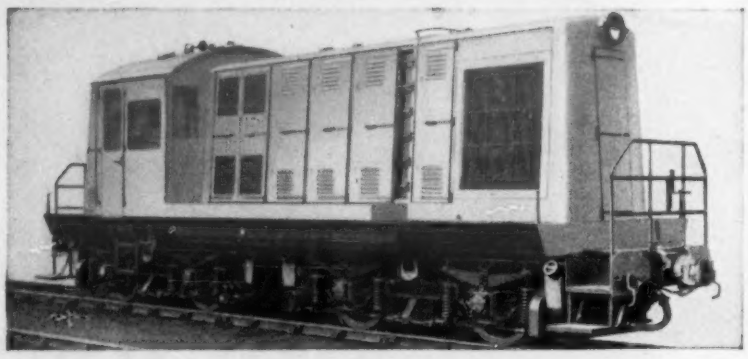
Rhodesian Pneuway System

Only meagre details have so far been released of the "pneuway" railway system evolved by engineers in Southern Rhodesia, but it is stated that pneumatic-tyred trains will run on an overhead track made of reinforced concrete which is estimated to cost only £21,000 a mile to build. This is the system which Lord Hawkes recently described in the House of Lords as "revolutionary" and likely to be extremely valuable in opening up the great spaces of Africa with all-weather transport. A commission of experts from Britain is expected to arrive in Salisbury in the near future. The inventors of this new type of railway are said to be Mr. V. W. Hampton, chief engineer of the Southern Rhodesian Department of Engineering and Construction, and two members of the senior technical staff, Mr. N. H. F. Renwick and Group-Captain G. D. Green. It is expected that a full technical report will be issued once the invention has been protected, but it is stated that it employs a twin rail track of reinforced concrete. The train itself is hauled by light diesel or electric motive power, and all equipment is capable of mass production, being in fact "already in daily use in lorries and trailers throughout the world."

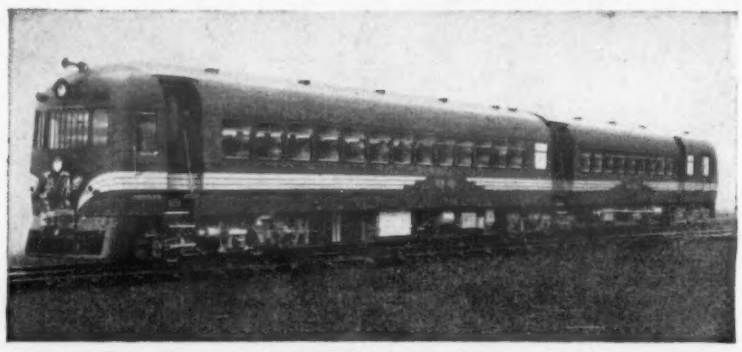
COMMONWEALTH RAILWAYS OF AUSTRALIA
955 H.P. Diesel-Electric Locomotive (10 Ton Axle Load)
In collaboration with Sulzer Bros. (London) Ltd and Crompton Parkinson Ltd.

BRITISH RAILWAYS
Three Unit Diesel Mechanical Railcars





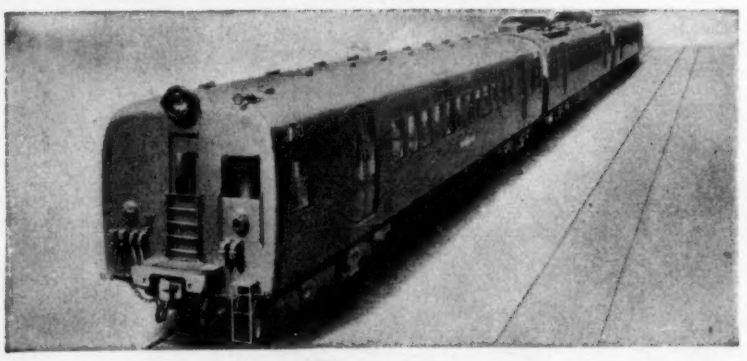
GHANA RAILWAYS
400 h.p. Diesel Electric Locomotive



NEW ZEALAND GOVERNMENT RAILWAYS
Twin Articulated Diesel Mechanical Railcars
In collaboration with The Drewry Car Co. Ltd.

BRITISH RAILWAYS
1,160 H.P. Diesel-Electric Locomotive
In collaboration with Sulzer Bros. (London) Ltd and Crompton Parkinson Ltd

SANTOS JUNDIAI RAILWAY, BRAZIL
3,000 Volts, 800 H.P. Three Car Train
In collaboration with The English Electric Co. Ltd.



THE BIRMINGHAM RAILWAY CARRIAGE & WAGON CO. LTD
Smethwick
TELEPHONE SMETHWICK 1881
TELEGRAMS 'CARRIAGE SMETHWICK

COMMERCIAL AVIATION

Contract for DH 121

AIRCRAFT AT FARNBOROUGH

THE contract for the Airco DH 121 jet air liner for British European Airways was signed last week. Mr. Anthony Milward, chief executive of B.E.A., signed the contract for 24 aircraft with Sir Aubrey Burke, managing director of the Aircraft Manufacturing Co., Limited, which represents de Havilland, Fairey Aviation and Hunting Aircraft interests. The DH 121 will be powered by three Rolls-Royce RB 163 by-pass jet engines mounted at the tail and will carry 75 passengers in first- and tourist-class mixed accommodation, or about 90 in economy-class seating. Deliveries should start towards the end of 1963 and B.E.A. summer services in 1964 will begin with six or more of the fleet in full airline operation. The value of the contract for aircraft and spares is nearly £30 million. The opportunity was also taken to sign a contract for a further de Havilland Comet 4B, which will bring the B.E.A. Comet fleet to seven. Designed for short- and medium-distance operations, the Airco DH 121 will have a cruising speed of more than 600 m.p.h., an ability to operate from 6,000-ft. runways and to carry a full passenger payload over stages up to 1,200 miles. Meanwhile the corporation should receive its first Comet in October, two months ahead of schedule, and it is hoped that it will be put into commercial service almost at once.

Higher Thrust for Rolls-Royce Conway

The Rolls-Royce Conway by-pass (turbo-fan) jet for the Boeing 707-420 and Douglas DC8 intercontinental jet air liners will now enter service at a rating of 17,500 lb. guaranteed minimum take-off thrust instead of at the previously specified rating of 16,500 lb. guaranteed minimum take-off thrust. The experience gained in the development of the Conway has enabled Rolls-Royce to introduce this new rating some 12-18 months earlier than promised. Both the Conway-powered Douglas DC8 and Boeing 707 are carrying out their certification flying programmes.

More DC8s for K.L.M.

K.L.M. (Royal Dutch Airlines) has increased its order for Douglas DC8 jet air liners from eight to 12. The announcement of the addition came before K.L.M. had taken delivery of its first DC8, which is due next January; six more will follow during the year. The four extra aircraft, as well as the last of the series of eight, will be equipped with JT3D by-pass engines. It is estimated that these will have a fuel consumption approximately 14 per cent lower than that of the JT4A turbojet engines which are to be installed in the first seven of the K.L.M. DC8s. The five powered by turbo-fan engines will be delivered in the spring of 1961.

Record July Traffic for Aer Lingus

Traffic on Aer Lingus-Irish Air Lines routes in July broke all records. Over 91,700 passengers were carried—an increase of 13,000 on the figure for July last year. Traffic on the London—Dublin route rose to 28,400 from 22,800 in July, 1958, while over 11,000 passengers flew on the Dublin—Manchester route—an increase of nearly 1,000. There was also a substantial increase in transatlantic traffic and during the month over 4,200 passengers were carried compared with 2,600 in July last year. Nearly 900 tons of freight and mail were carried during the month compared with less than 800 tons in July, 1958.

Swissair and S.A.S. Consider Change in Order

Swissair and Scandinavian Airlines System have stated that they are at present examining the question whether they should change their order for five Convair 880 medium-range jets to the new Convair 600 Coronado. The airlines said that since the joint order was placed in October, 1958, it has become evident that the change to by-pass jet engines with which the Convair 600 will be equipped will result in essential improvements regarding payload, speed and specific fuel consumption. Furthermore, data now available has established that the by-pass engines have a lower noise level. Although the Convair 880 has already successfully completed the major part of its test programme and in some respects exceeded the calculated performance, the improved Coronado version appears to promise advantages for the specific route requirements of Swissair and S.A.S.

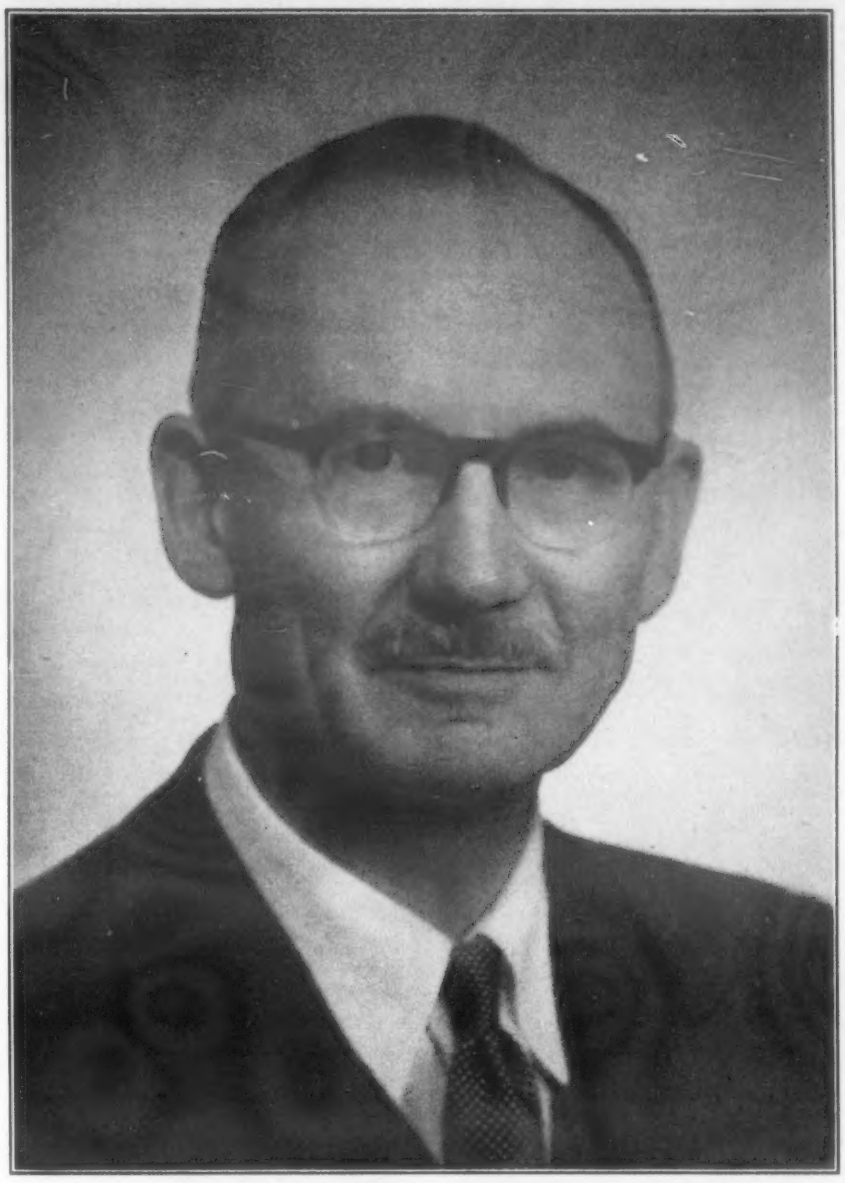
Fight for Southampton Continues

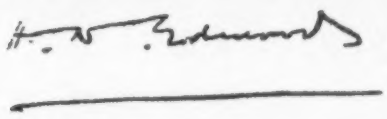
Southampton Corporation is to be asked to hold talks with Hampshire County Council on future airport needs in Southern Hampshire. The request has come from Southampton Airport Consultative Committee, which held a meeting with representatives of local authorities in the area surrounding the airport, which is threatened with closure at the end of 1961. Mr. J. M. Buckridge, divisional operations officer, told the committee that the Minister of Transport was not anxious to close any airport. "Short of putting his hand in his pocket, he is prepared to do anything to keep this one going," he said. "I think Southampton's town clerk has had another letter from him, saying that his offer is still open for any local authorities to take it over. If that can be done State help has not been ruled out." The Minister was under severe criticism from the Treasury and had been pressed to reduce annual losses on airports.

Aircraft at Farnborough

This year's S.B.A.C. Flying Display at Farnborough (September 7-13) will feature three important new air liners, a vertical take-off air liner, a wide range of helicopters and the Hovercraft. Of the new air liners, the Vickers Vanguard is the largest. This turboprop aircraft is capable of carrying 130 passengers over short- and medium-stage lengths. The Armstrong Whitworth Argosy, also powered by turboprop engines, can be used as a freight or passenger aircraft, or in mixed passenger-freight configuration. The de Havilland Comet 4B, of the type due to enter service with British European Airways in October, is also to be seen for the first time at an S.B.A.C. show. The Dart-powered Handley Page Herald is to make its first appearance at Farnborough, as is a number of new type variants. The Saunders-Roe P531 helicopter, seen for the first time last year, will fly with the new Blackburn A129 engine and another P531, fitted with a de Havilland Gnome, will be in the static park. There will be a Scottish Aviation Twin Pioneer with new, uprated Alvis Leonides engines in the flying display, also the Fairey Rotodyne vertical take-off air liner which will give a demonstration of its remarkable qualities. Helicopters present will include—in addition to the P531 already mentioned—the turbine-powered, twin-rotor Bristol 192, two Westland Westminster flying cranes, a Wessex, two Whirlwinds (naval and civil), a Widgeon and a Skeeter.

METROPOLITAN-CAMMELL





Mr. H. N. EDWARDS, M.I.Loco.E.

• • • • • •

As already announced in MODERN TRANSPORT, Mr. Harry Norman Edwards, M.I.Loco.E., managing director, Metropolitan-Cammell Carriage and Wagon Co., Limited, was appointed chairman of the board on July 15 in succession to the late Sir Archibald J. Boyd. Mr. Edwards was educated at the Merchant Venturers Technical College, Bristol, and entered the drawing office of the Bristol Wagon and Carriage Works in 1910. On the outbreak of war in 1914 he enlisted and served in the 1/6th Gloucestershire Regiment and was later commissioned in the Machine Gun Corps (Heavy Branch), later Tank Corps, and was mentioned in dispatches. Mr. Edwards rejoined Bristol Wagon Works, and, after the absorption of that undertaking by Cammell Laird and Company in 1923, he was transferred to the Midland Railway-Carriage and Wagon Company, Birmingham. In 1926 he was appointed liaison officer to Mr. Arthur S. Bailey, then managing director of the rolling stock subsidiary companies of Cammell Laird and Company with headquarters at Nottingham, and, in January, 1929, when these interests were merged with the Metropolitan Carriage, Wagon and Finance Co., Limited, he moved to the Saltley head office of the new organisation —Metropolitan-Cammell Carriage and Wagon Co., Limited—later becoming commercial assistant to the general manager. Mr. Edwards was appointed commercial manager of the company in 1936, special director in 1947, assistant managing director with a seat on the board in 1948 and managing director in 1954. During the 1939-45 war Mr. Edwards commanded "B" Company of the 37th Warwickshire (B'ham.) Bn. Home Guard. Mr. Edwards is also a director of the Patent Shaft Steel Works, Limited, G. H. Sheffield and Company (Engineers) Limited, Metropolitan-Cammell-Weymann, Limited, Metropolitan Railcars, Limited, Metropolitan-Cammell Carriage and Wagon Company Africa (Pty.), Limited, and Zambesi Coachworks, Limited, of Southern Rhodesia.

LETTERS TO THE EDITOR

White Lines and Fog

COMPUTING TIMETABLES

SIR,—Now that autumn fogs are approaching, I feel that all road users should be alerted to what I regard as a fresh hazard. This summer the Minister of Transport announced that he intends in the near future to authorise revised white-line marking in which the gap in the traffic-lane marking will be increased from 5 to 8 yd. Already gaps of 20 yd. are being tried experimentally on the Preston by-pass. This may be well enough in clear weather but has Mr. Watkinson not overlooked dangers that will arise in fog?

Where there are no cats eyes, most fog-bound motorists rely for guidance on the central dotted white line. To lengthen interruptions in this essential guide prolongs the interval during which the driver is deprived of any sense of direction. This can only increase the perils of driving in fog; my own firm's records for our large fleet always show a marked increase in accidents when fog is about. The Minister should consider this point carefully before taking steps which would, presumably, save a certain amount of the taxpayers' money on paint at the expense, perhaps, of more lives lost.—Yours faithfully,

E. LESLIE MARSHALL,
Joint Managing Director,
Daimler Hire, Limited.

243 *Knightsbridge, S.W.7.*

Electronic Timetable Computation

SIR,—As my work is concerned with the application of electronic computers to *railway* timetables, I was interested to read the various comments on using computers for *bus* timetables, made at the recent P.T.A. conference at Folkestone, reported in MODERN TRANSPORT of May 23.

It would appear that some of the speakers at the discussion reported have misconceptions of the uses and applications of computers. It has been stated, for example, that computers are of little use unless the right data and instructions be fed into them. This is perfectly true, but I gain the impression that the idea is for a computer to automatically churn out whatever is required of it, with no more effort by the user than to press a button.

An electronic computer is a highly efficient and amazingly fast-operating piece in *inanimate* equipment. It has the ability to "memorise," and to make "decisions," provided that it is "told" to do so at the right stages in its work, and provided that the right information is on hand. The term "electronic brain" is a misnomer, since a computer is (at its current stage of development) incapable of learning by experience. If the instructions given are wrong it will slavishly follow them, unless their form offends the considerable internal checking equipment.

The task that is set before a computer is termed the "programme." Such a programme itemises each individual operation to be performed to complete the task. The nature of such instructions is generally:

1. Place 2 in a specified storage place in the computer.
2. Add 2 to that same storage place.
3. Print out the result.

Thus three separate instructions are given rather than "What is 2+2?" In other words, the programme must be rather more definite than "Produce the summer schedule for route 153."

Complicated Process

Thus it will appear that writing a computer programme is a lengthy and complicated process. However, once written, the programme may be used an infinite number of times. A generalised bus timetabling programme, that has been fully tested against all possible conditions, should be usable for all temporary and permanent revisions of any multiples of bus routes. The particular advantages of computer timetable production lay in the speed of computation and finalisation, with resulting benefits to the bus operator in being able to make changes with a longer margin before any adoption, rejection, or further alteration. What bus operator has not had to revise schedules at the last minute? Indeed, how many schedules have had to be operated, because there has been insufficient time to examine any other possibilities which could have proved more economical or otherwise advantageous?

Mr. G. A. Cherry, of Birkenhead, is perhaps mistaken in considering the preparation of data of primary importance. The fundamental is the programme. It is even possible to employ staff with a minimum of training (e.g. girls) to prepare such data, which, with a sophisticated programme, may be reduced to the bare minimum. Also, the "decisions" he mentions, if logical, may be made by the computer. The computer takes the place of his best scheduling clerk, but is considerably faster, will work a longer working week, and is not subject to sick leave, holidays, strikes, or the "Monday morning feeling."

There is a considerable field of applications in all branches of transport for the electronic computer, and I have no doubt that in the future, computers will be used as much as typewriters by the industry.—Yours faithfully,

D. R. A. COAN.

13 *Beck Road,*
Hackney, E.8.

The Editor is always glad to receive letters from readers on subjects germane to the transport industry, but these should be written as concisely as possible. The opinions expressed therein must not, however, be regarded as having editorial endorsement. Where correspondents desire to use a nom-de-plume it is essential that the Editor should be informed of the name and full address of the writer as indication of good faith.

★

PUBLICATIONS RECEIVED

RUBBER DEVELOPMENTS. Articles of interest to the transport industry in the Spring 1959 edition of this journal issued by the Natural Rubber Development Board, Market Buildings, Mark Lane, London, E.C.3, include those on the use of rubber air bags for clearing bunkers, rubberised roads in Queensland and rubber mouse-tail straps for securing equipment and cables, and supplementary information on controlling vibrations in structures and plant.

MULTI-PURPOSE GRADALL. Two new brochures published by Blackwood Hodge, 25 Berkeley Square, London, W.1, British distributor for the Warner and Swasey Company. The great versatility of this American earth-moving and construction machine, various types of carrier vehicle and a wide range of attachments are described and illustrated.

BUTYL SHIPWIRING CABLES. A report on the development and use of Butyl rubber shipwiring cables, which are now approved by *Lloyds Register of Shipping*, published by Esso Petroleum Co., Limited, Chemicals Department, 36 Queen Anne's Gate, London, S.W.1. The report indicates how shipowners have demonstrated a number of advantages of Butyl cables, including higher permitted current rating and reduced installation and maintenance costs.

OFFICIAL NOTICE

COUNTY BOROUGH OF BOLTON

TRANSPORT GENERAL MANAGER AND ENGINEER

APPLICATIONS are invited for this appointment. Salary Scale H (£2,195—£2,475). Forms of application and particulars of terms and conditions of appointment may be obtained from the undersigned, to whom applications should be delivered not later than September 5, 1959.

PHILIP S. RENNISON,
Town Clerk.

Town Hall, Bolton.

CLASSIFIED ADVERTISEMENTS

CLASSIFIED ADVERTISEMENTS should be addressed to THE MANAGER, Classified Advertisements, MODERN TRANSPORT, Russell Court, 3-16 Woburn Place, London, W.C.1.

RATES.—The minimum charge for classified advertisements is 7s. for 14 words or less, and 6d. for each additional word. The name and address of the advertiser is charged at the same rate. If a box number is used 2s. extra is charged to cover our name and address and postage. If set in paragraph form each paragraph is estimated separately. Official Notices and semi-display in the classified columns are charged at the rate of 40s. per single column inch.

SITUATIONS VACANT

FIRST-CLASS distribution and warehouse manager required for Oxford area. Must be good disciplinarian and willing to accept complete responsibility for his department. Salary by agreement. Age preferably 35 to 45. Box No. 3815, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

SENIOR sales executive initially to accept responsibility of sales manager with a possibility of a directorship, to accept full responsibility for the sales of single- and double-decker buses for both home market and export. This requirement is for a long-established and well-known name in manufacturer. Send full particulars in confidence to Box No. 3816, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

PLASTICELL MANUFACTURE

In United Kingdom by B.T.R. Company

MANUFACTURING rights in Great Britain of the product known in France as Klegecell and in this country as Plasticell, have been acquired by B.T.R. Industries, Limited, from Kleber-Colombes, of Paris. Microcell, Limited—a member of the B.T.R. Group—will now market Plasticell throughout the U.K. while the promotion and sales of the product to users in the glass-reinforced plastics industry will be handled through Glass Yarns and Deeside Fabrics, Limited—a Microcell associated company.

Shaped Plasticell sheets for coachwork

Plasticell is a closed-cell cellular thermoplastic product, available in both rigid and flexible forms, the basis of which is polyvinyl chloride. The five rigid grades are characterised by high strength-to-weight ratio and range from an approximate density of 2.5 lb. per cu. ft. with a minimum compression strength of 40 lb. per sq. in. to 6.25 lb. per cu. ft. with compressive strength of 185 lb. per sq. in. They do not support combustion, are buoyant and resistant to chemical attack and have excellent thermal and electrical properties.

The principal rigid grades of Plasticell are available in sheets and blocks from 3 ft. to 4 ft. square—depending on grade—in thicknesses from ¼ in. up to 3 in. Grade DB has a larger cell structure than the others and is intended primarily for thermal insulation and buoyancy. It is available in blocks from 1 in. up to 3½ in. thick. The material can be readily worked with ordinary woodworking tools and can be formed, even to double curvature, by light pressure after heating in an oven or hot water or by infra-red heat. It will bond readily to wood, metal, plastics, glass and so on for the fabrication of sandwich structures.

Transport Applications

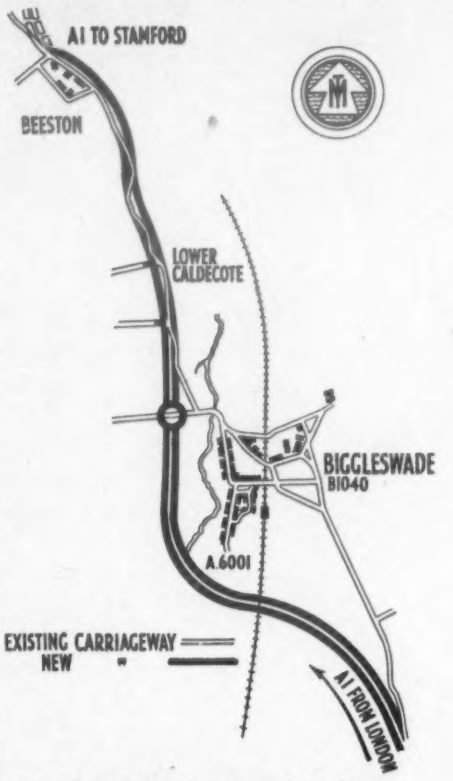
Rigid Plasticell has a number of actual and potential transport applications. In the general marine field it is used for lifebuoys and marker buoys and floats and is approved by the Ministry of Transport and Civil Aviation for use as solid buoyancy in ship's lifeboats. In ships and boats it is finding uses as an interlayer between reinforced plastics skins to impart hull rigidity and in sandwich form with skins of varying materials for cabin

(*Continued at foot of next column*)

BIGGLESWADE BY-PASS

Work Starting

IT is announced that work is about to start on the 2.6-mile Biggleswade by-pass and the improvement of a further 2¼ miles of the existing trunk road (A1) northwards to Beeston. A contract to the value of £930,803 has been awarded to Sydney Green and Sons of Henley-on-Thames. The by-pass will leave the Great North Road (A1) half a mile south of Dunton Turn junction and will run on the south and west side of Biggleswade to rejoin the original road a quarter of a mile north of the Old Warden Road junction, where a large roundabout will be constructed.



The Biggleswade by-pass and the improvements north therefrom to Beeston

From this point northward the existing road will be modernised. Dual 24-ft. carriageways and 10-ft. wide central reservation will be provided throughout, together with hard shoulder verges on both sides. New bridges will be constructed over the main Great Northern Line railway of the Eastern Region and also over Langford Road and the River Ivel. The scheme, nearly 5 miles in total length, has been prepared for the Ministry of Transport by Bedfordshire County Council under the supervision of the county surveyor, Mr. S. W. Lynn, A.M.I.C.E., A.M.I.Struct.E. It is expected that it will be finished in 18 months.

TRADER RANGE EXTENDED

(*Continued from page 9*)

tinuous ruts, ridges and deep potholes. Over this the vehicle was operated in rear drive and high range and at speeds generally ranging between 25 and 35 m.p.h. Again, control proved to be light and this and good visibility from the cab enabled action to be taken in plenty of time to pick out and follow the least shattering course. Not that this was really necessary, for the Trader seemed well able to take indefinitely all that this kind of going imposed on it and even one passenger appeared to be having a reasonably steady ride, which was a good recommendation of both the vehicle and the cab suspension. The free-standing steering column, though given to shimmying with the vehicle stationary and the engine idling, appeared to contribute to the generally comfortable ride experienced by the driver over these very rough surfaces.

The four-by-four Thames Trader during our short acquaintance gave every indication of having been developed up to the standard required for sustained working under any type of operating condition. Maximum use of standard Ford components simplifies spares provisioning and ensures immediate availability through the universal Ford parts service. There is an assured future for the vehicle at the attractive price of £2,013 for the four-wheel-drive 138-in. chassis and cab, made up of £1,217 for the standard 7-ton Trader and £796 for the All Wheel Drive conversion.

PLASTICELL MANUFACTURE

(*Continued from previous column*)

partitions, hold coverings and cold-room doors. It is also widely used in aircraft in various sandwich forms for cabin bulkheads, doors, flooring and furnishings.

The bonding properties of Plasticell coupled with good strength-weight ratio make it appear particularly attractive in passenger and specialised goods vehicle coachwork. Using the material as a core bonded to aluminium or glass-reinforced plastics sheets it could be possible to dispense with much of the framing in passenger bodies, while for insulated or refrigerated goods bodywork a Plasticell sandwich construction could serve the dual role of insulant and structural material.

Forthcoming Events

August 23.—Historic Commercial Vehicle Club. Rally at Basildon New Town

August 29.—Omnibus Society. Visit to Weymanns, Limited, Addlestone.

August 30.—Omnibus Society (North Western and Yorkshire). Study tour of Wrexham area independents.

September 5.—Railway Students Association. Annual summer outing. Leave Guildford Station 10.45 a.m.

September 7-13.—Society of British Aircraft Constructors. Flying display and exhibition. At Farnborough. (Public days September 11-13.)

September 12.—Railway and Canal Historical Society. Visit to Leeds and Liverpool Canal.

September 14.—Institute of Transport. Brancker Memorial Lecture by Captain E. V. Rickenbacker. At 66 Portland Place, W.1. 5.45 p.m.

...in the busiest vans on the road

Sleek-and-zestful 10/12 & 15 cwt. vans—first choice in their class for economical top-efficiency delivery duty.
Prices: 10/12 cwt. £459, 15 cwt. £469 *(in primer)*.

Watch them at work—these top-ruling Thames 5/7 cwt. vans. There's an air about them that's uniquely brisk and businesslike . . . *and* they're as efficient as they look! Quick, manoeuvrable, tremendously tough, Thames 5/7's are saloon-car styled to carry your name with credit, 'glide-ride' sprung to protect fragile loads and make drivers' work easy as can be. And what's more, they're the lowest-priced vans in their field—economical to run and backed by famous low-cost Ford Service. Find out the figures from your Ford Dealer: it's time you put Thames to work—to lower costs, raise profits!

Prices: 5 cwt. £338, 7 cwt. £365 *(in primer)*.

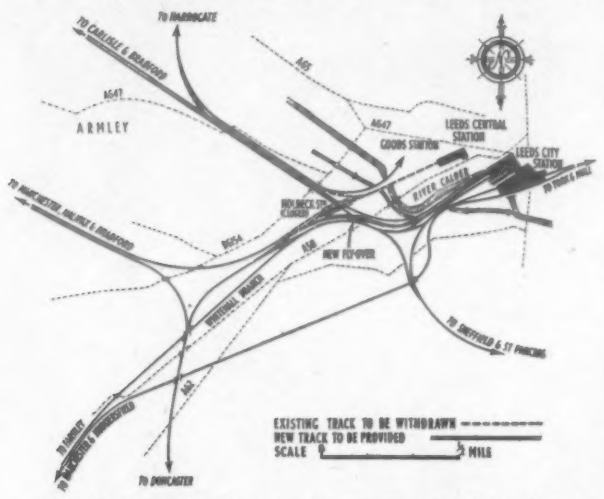
THAMES VANS BY FORD

BRITAIN'S BIGGEST SELLERS — THAMES VANS AND TRUCKS

Economics of British Railways

(*Continued from page 5*)

Concentration of traffics on fewer terminals will make possible the better utilisation of the facilities provided at the terminals and will enable economic use to be made of modern appliances. With fewer stations, there will be a reduction in marshalling and in the mileage of the local pick-up services. Better loading will be possible on the trunk haul trains, thus further reducing train-mileage, and the replacement of steam by diesel traction (and, to a smaller extent in the period under review, by electric traction) will reduce the cost of train haulage. Elimination of many small stations and sidings will also result in reduction in shunting work by train engines. At the same time the further substitution of diesel shunting locomotives for steam will reduce the cost of shunting. The equipment and layout of the terminals themselves, including private sidings, will also be improved.



What modernisation involves: Rearrangements of junctions outside Leeds for proposed merger of Leeds City and Leeds Central passenger stations

All these factors will help to improve the turn-round time of wagons and will enable the stock of wagons to be reduced from 1,100,000 at the end of 1957 to a planning figure of 750,000 by the end of 1963. The capacity of the wagons in service is being steadily increased, with the object of increasing the average load carried, and steps will be taken to make full use of this increased capacity. The increase in wagon capacity and the fitting of modern brakes, together with other technical improvements designed to improve their running or reduce maintenance, will increase the initial cost of wagons. This will absorb some part of the benefits from the reduced numbers expected from the better performance and utilisation of the wagon stock. These technical changes are, however, an important factor in the modernisation of the freight services, since the reduction in train working costs expected from the new forms of traction is largely dependent upon good utilisation of manpower and equipment, and these in turn are in part dependent upon the higher speeds and improved punctuality and reliability which the technical improvements to the wagons will make possible. In total it is forecast that by 1963 the freight train-mileage operated will be reduced by about 15 per cent, while the haulage costs per mile are also expected to be reduced by about 7½ per cent.

Smaller Better Paid Staff

As regards salaries and wages, the Commission's objective is to have a smaller but better paid staff. With the co-operation of the trade unions work study should assist in a higher level of productivity with improved earnings for the staff through incentive bonus schemes. By 1963 depreciation charges will be about £14 million higher owing to the introduction of new equipment and replacement of old at higher prices. At the same time the full benefit of modernisation will not be felt because freight concentration schemes will not be complete and the main-line electrification from Euston northward will not be finished.

To sum up as regards working expenses, it is forecast that, on the freight side, some 15 per cent less freight train-miles will be operated to handle a slightly increased volume of traffic; on the passenger side a higher volume of traffic will be catered for by much the same train-mileage, increases in fast and semi-fast services being offset by reductions in the stopping services. Savings will also be obtained from the much extended operation of diesel and electric traction and from the closure of little-used lines, stations and depots. Off-setting factors are that the smaller staff will be better paid and that depreciation charges will be higher.

Central Charges

In 1957 the charge to revenue account for central charges, mainly interest on British Transport stock and other interest charges, totalled £60 million. Of this amount £41 million was allocated to British Railways and £19 million to the other activities of the Commission. Advances on a substantial scale are being taken from the Ministry of Transport to finance expenditure on modernisation. Under the provisions of the Transport (Railway Finances) Act, 1957, the interest on these advances is charged for a limited period to a special account and only falls on revenue account three years after the end of the year in which the money was borrowed. Based upon current estimates of the finance required, it is expected that by the year 1963 the interest chargeable to revenue account on capital monies borrowed for British Railways will have risen by some £20 million, making the central charges allocation about £62 million. The additional capital expenditure on other activities will increase their share of central charges by about £4 million. A further £35 million or so of interest will be chargeable to the special account at the end of 1963 but will fall on revenue account by instalments over the next four years.

Compound Interest

In addition, the Commission has to pay interest on the advances which are being made by the Ministry of Transport to finance railway deficits, under the provisions of the Transport (Railway Finances) Act, 1957. Interest on these advances is also chargeable to the special account for a limited period. In 1963, the amount chargeable to revenue account in this respect will be about £5 million, but the 1957 Act provides that interest on sums borrowed in respect of deficits must all be chargeable to revenue account as from the beginning of the year 1965. If the maximum permitted advances of £400 million in respect of deficits have been required, the charge to revenue account in 1965 for compound interest on these advances may be about £25 million. The Commission is also under the obligation to begin repaying these advances not later than the seventh year after that to which the advance relates; the first repayment accordingly falls to be made in 1963. If the maximum advances which can be made to the Commission to finance revenue deficits have been required by the end of the year 1963, the amount standing to the debit of the special account would be about £750 million.

Summary of Financial Outlook

In the light of the appreciation by the Commission and subject to the many assumptions necessarily inherent in such a forecast, by 1963 the gross receipts of the B.T.C. should more than cover the working expenses, leaving a substantial working surplus, which it is considered can reasonably be put at between £50 million and £100 million. The improvements expected by about the end of the year 1963, as compared with the year 1957, may be somewhat as follows:—

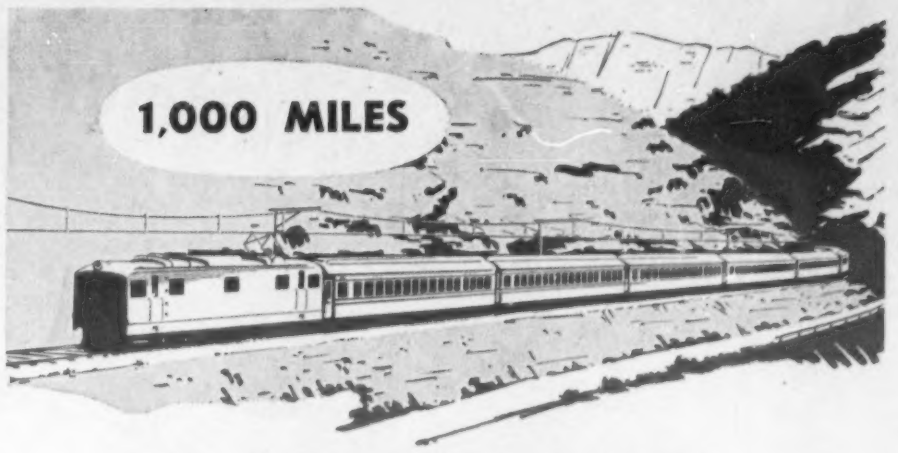
British Railways	
Freight services: net improvement expected from a small increase in traffics (on balance) carried at lower rates on average and reduced working expenses ..	From +£5m. to +£35m.
Passenger services: net improvement expected from increased volume of traffics, higher fares and reduced working expenses	From +£50m. to +£70m.
Track, signalling, general administration, etc.—net increase in working expenses expected	—£10m.
	From +£45m. to +£95m.
Other Activities Net improvement forecast —about	+£10m.
Commission as a whole Improvement forecast for period from 1957 to 1963	From +£55m. to +£105m.
Deduct: Working deficit in year 1957	£4m.
Working Surplus forecast for about the end of the year 1963 ..	Between £50m. and £100m.

The range of £50 million in this estimate may seem wide, but it represents some 3 per cent only of the annual receipts and expenses of the Commission as a whole, which is not large in view of all the shifting factors involved. The charge to revenue account in respect of central charges (exclusive of interest on deficit advances) will, however, have risen by 1963 to about £85 million. The financial results of the Commission at that time, after allowing for this revenue charge, may accordingly, if the efforts made are successful and circumstances favourable, show a small net surplus; on the other hand, if circumstances are unfavourable a deficit is to be expected.

B.T.C TRAFFIC RECEIPTS: PERIOD NO. 7—1959

	Four weeks to July 12, 1959			Aggregate for 28 weeks		
	1959	1958	+ or —	1959	1958	+ or —
	(£ thousands)			(£ thousands)		
PASSENGERS						
British Railways	13,007	12,961	+ 46	70,513	70,526	— 13
London Transport						
Railways	1,749	1,869	— 120	12,635	13,399	— 764
Roads	4,318	3,272	+ 1,046	29,020	23,164	+ 5,856
Provincial and Scottish Buses	5,357	5,295	+ 62	31,144	30,942	+ 202
Ships	933	868	+ 65	3,076	2,899	+ 177
Total Passengers	25,364	24,265	+ 1,099	146,388	140,930	+ 5,458
FREIGHT, PARCELS AND MAILS						
British Railways						
Merchandise and livestock	7,404	7,952	— 548	52,297	57,562	— 4,265
Minerals	3,316	3,262	+ 54	23,488	25,840	— 2,352
Coal and Coke	7,672	9,041	— 1,369	61,681	70,702	— 9,021
Parcels, etc., by coaching train ...	4,075	4,055	+ 20	28,359	27,939	+ 420
Total Freight British Railways	22,467	24,310	— 1,843	165,825	182,043	— 16,218
Others	4,439	4,355	+ 84	29,260	28,975	+ 285
Total Freight, Parcels and Mails	26,906	28,665	— 1,759	195,085	211,018	— 15,933
Aggregate	52,270	52,930	— 660	341,473	351,948	— 10,475

Comparisons are affected by changes in fares and rates which have been authorised from time to time and by the London Transport road services strike from May 5 to June 20, 1958



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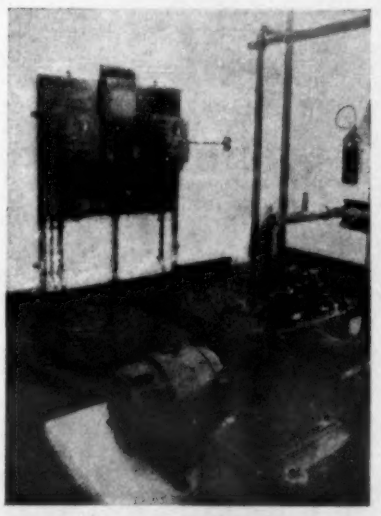
The installation which was carried out by Westinghouse Brake and Signal Company of London in conjunction with Westinghouse Brake & Signal Co., S.A. (Pty) Ltd., of Johannesburg, was brought into service within 13 months and within the contract date stipulated by the South African Railways Administration.



Operating from an all-electric lever frame of 47 levers, the installation includes 56 E.P. point mechanisms, 68 searchlight and multi-aspect main signals, 21 shunt signals, 83 track circuits. Plug-in relays are used throughout.

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RAILWAY TROOPS AT LONGMOOR

Summer Training

SPECIAL articles in MODERN TRANSPORT of March 7 and 14 last described the origin and development of the Longmoor Military Railway. Opportunity came this summer to see railwaymen at work on their training course on the L.M.R.

In camp under the command of 19 Railway Regiment R.E. (A.E.R.) (Lieut.-Col. R. A. Savill, E.R.D., R.E. (A.E.R.)) were 150 Railway Squadron (Eastern Region) (Major D. Ayres, E.R.D., R.E. (A.E.R.)) and 153 Railway Squadron (North Eastern Region) (Major T. F. Cameron, E.R.D., R.E. (A.E.R.)), forming part of 17 Railway Group (Col. F. R. L. Barnwell, O.B.E., E.R.D., R.E. (A.E.R.)), together with 345 Construction Squadron R.E. (A.E.R.) (Major R. K. Conway, E.R.D., R.E. (A.E.R.)) which was working with 19 Railway Regiment, while 7 Movement Control Group (Major L. W. Leppington, E.R.D., R.E. (A.E.R.)) was in camp on a separate training programme. The first week's training, in addition to drill, weapon training and range practices includes periods on other aspects of military duties and emphasis this year was placed on first-aid and nuclear warfare. The first week culminated with a church parade on Sunday at which the Commandant of the TN Centre, Longmoor (Brigadier P. D. G. Buchanan) took the salute. A special award is made annually in the form of the Barrington-Ward Cup to the unit in 19 Railway Regiment which is judged to be superior on all aspects of the first week's training, marks being awarded for particular items which include dress and bearing and punctuality as well as drill and weapon training. In 1958 150 Squadron won the cup and the winner for this camp was 153 Squadron.

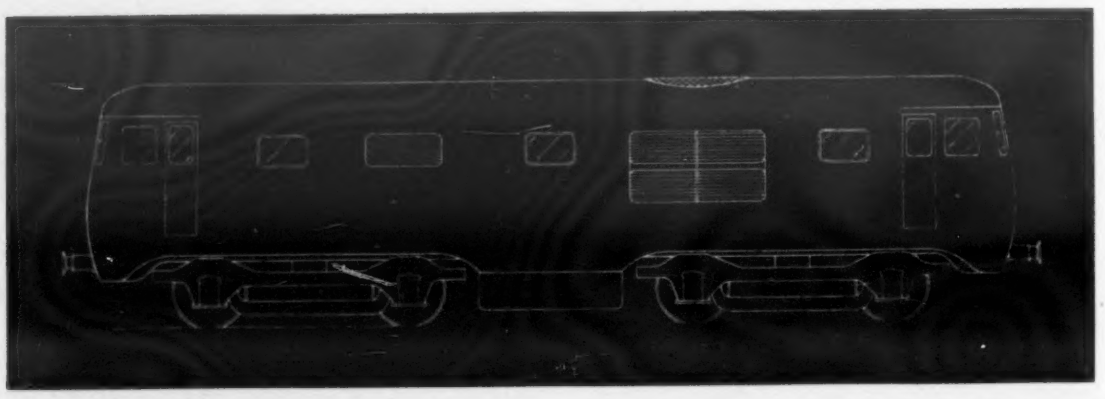
In the second week a technical exercise was carried out. After the first days' refresher course on rules and learning the road 19 Railway Regiment took over the L.M.R. and ran it in accordance with the daily timetable and routine requirements, which includes a passenger service for civilians working in the Longmoor area, for five days. In addition to the normal L.M.R. commitments, at 18.00 hours on the Wednesday an exercise set by the Transportation Centre Staff and christened "Knight Errant" was undertaken. This ran until 01.00 hours each night. Its background was that the Southern Region main line was cut as a result of a nuclear bombardment of Portsmouth and military traffic moving forward to the railhead at Rowlands Castle had to pass over the L.M.R. Quite a lot of preliminary train working had to be undertaken beforehand to place stock ready

(*Continued on page* 20)

On the Longmoor Military Railway: Men of 150 and 153 Railway Squadrons, A.E.R., augmented by 345 Construction Squadron, relaying track layout at Oakhanger; lower right, railway officers joining the inspection saloon (ex L.N.W.R.) at Liss

45

HYMEK LOCOMOTIVES FOR BRITISH RAILWAYS



THE BRITISH TRANSPORT COMMISSION have ordered 45 HYMEK diesel hydro-mechanical main line locomotives, for the Western Region of British Railways.

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DANISH TRANSPORT

Institute of Transport Visit

UNDER the presidency of Major-General G. N. Russell members of the Institute of Transport enjoyed, in mid-June, a congress in Copenhagen, which enabled a study to be made of a number of aspects of Danish transport development. The president was supported by Sir Reginald Wilson and Brigadier-General Sir Osborne Mance, past-presidents, Mr. H. H. Crow, vice-president, many members of council and chairmen of sections, including Mr. A. H. McCutchan, from New South Wales, and a large body of ordinary members, including graduates and students. A useful feature was a lantern lecture on the transport situation in Denmark, given by Mr. F. P. Pedersen, new works engineer of the Danish State Railways, who had co-ordinated arrangements for the visits, and whose articles on the modernisation programmes of the D.S.B. appeared in MODERN TRANSPORT of June 6 and 13. A lively discussion ensued, but had to be curtailed in order that members could be offered a civic welcome by the Lord Mayor.

Cutting the cake at the luncheon given Institute of Transport members on the Danish State Railways ferry at Halsskov

Port Development

The port of Copenhagen has developed in a most remarkable manner. In 1900 it was used by ships totalling 3.3 million net register tons. By 1931 calls were made by ships totalling 6.6 million n.r.t.; in 1938 the figure was 8 million and by 1952 it was 9 million. The 1956 figure of 11.4 million n.r.t., made up by 24,219 vessels, was a record. This remarkable growth may be attributed to the geographical advantages of the port and the enthusiasm with which its officers have provided new facilities and have made them known to customers. The port is controlled by an independent trust, the Copenhagen Harbour Board, presided over by the City Prefect of Copenhagen, who is ex-officio chairman, and comprising 16 members representative of government, city, trade and shipping. The Institute party was able to inspect a number of warehouses, see container ships being loaded on Danish coastal services, and study the facilities of the free port, which dates from 1894 and acts as a transit centre for Northern and Central Europe; it has a warehouse floor space of 4.7 million sq. ft.

Members lunched at the invitation of Count Carl Moltke, the present chairman of the Harbour Board, who was accompanied by Mr. Aage Hendrup and other officers of the undertaking. Subsequently they visited Kastrup, where they were received by Mr. Carl E. G. Weibol, deputy airport director, who showed the layout of the new terminal building now nearing completion. Copenhagen airport has a high place among those of Europe for its number of takeoffs and landings and for its traffics, and the enlargement of runways and of the terminal to meet the needs of the jet age has been imperative. The party also studied Scandinavian Airlines System overhaul methods in the works at the airport, by kind arrangement of Mr. Möller-Nielsen. Incidentally S.A.S. has just opened a new terminal building for passengers in the centre of Copenhagen; it is well equipped with electronic charting aids and will next year be completed by the addition of a multi-storey hotel.

Open-Air Bus Parking

The Copenhagen Tramways undertaking has also been described in our columns by Mr. Ejnar Nielsen, the general manager; the Institute visit was to its most modern depot, Valby, where the buses in which the party was riding were taken through the washing machine as they entered the depot. Attractive further features were the opportunity of examining the hot water heating system for open air parking of buses and the exhibition of notable tramway and bus rolling stock from the days of horse traction to the present day.

After a lunch, presided over by Mr. Nielsen, whose witty speech in English will long be remembered, members visited Copenhagen Central Station to view recent rolling stock of the Danish State Railways and went on to a goods station to see perambulation by traders' vehicles in loading outwards smalls traffic for all parts of Denmark and loading of pallets by fork-lift truck.

A remarkable whole-day visit was also offered by the Danish State Railways, on behalf of which the members were welcomed by Mr. P. E. N. Skov, general manager, who was accompanied by Mr. Pedersen and Mr. A. Kristenson, divisional manager. Transferred by D.S.B. coaches from Copenhagen to Halsskov, facilities were provided for study of the new car ferries across the Great Belt. The return was made by a fast and comfortable diesel-hauled train from Slagelse.

The D.S.B. arranged for the Institute party to inspect a main-line diesel locomotive and rolling stock at Copenhagen Central Station; the locomotive is a Scandinavian product with General Motors engine built under licence; the new station buildings at Lyngby are to support a by-pass through the town; below, Thornycroft Nubian fire tender with Pyrene equipment at Kastrup airport; and, right, a de Dion-Bouton bus of 1913 from the Copenhagen Tramways rolling stock museum shown at Valby depot

Highway Progress

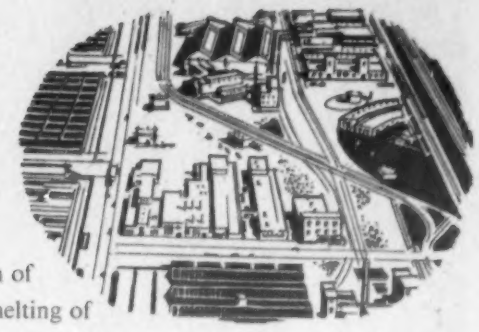
The final technical visit was that to the sites on which the Highways Branch of the Ministry of Transport is working in the Copenhagen area. The route taken included a section of motorway with non-conflicting crossings and junctions and the remarkable Lyngby by-pass, which runs through the town alongside the railway and then, to save essential space, is being taken over the top of the station roof. The station has been reconstructed for the purpose and this visit, where the Institute of Transport was given a welcome by Mr. K. Bang, chief of the Highways Branch in the Ministry of Transport, thus linked up with a previous short visit to two other rebuilt stations on the same route of the electrified D.S.B. suburban railway system. The eight days in Copenhagen were voted a most interesting and instructive congress by the participants.

BOOK NOTICE

Blockade and Economic Warfare

HISTORY OF THE SECOND WORLD WAR: THE ECONOMIC BLOCKADE, Volume II, by W. N. Medlicott. (London: H.M. Stationery Office and Longmans, Green and Co. Price 50s. net.) This is the second and concluding volume of Professor Medlicott's history of the blockade in the 1939-45 war. Like volume I, published in 1952, it is complete in itself and is based on unpublished papers in the archives of the Foreign Office and other Government departments, as well as on material from foreign sources. It takes the story from the summer of 1941 to the summer of 1945, and deals both with the place of economic warfare in the grand strategy of the Allies and with the application of the detailed plans to strangle the economy of Germany, Italy and Japan. Additional interest arises from the fact that after June, 1941, the economic campaign, which had hitherto been mainly a matter of British effort and inspiration, became effectively Anglo-American, with some lively clashes of aims and ideas. The administration of the blockade remained a British responsibility, with American representation on the Blockade Committee in London. Two chapters describe the complexities of this "contraband control" machinery in its full development and deal with the combined British and American efforts to suppress smuggling. A final chapter assesses the influence of economic warfare on the fortunes of the enemy and seeks to evaluate the extent and limits of its contribution to Allied victory.

More



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NEW SMALL BUS

Bedford-Duple 19-23 Seater for West Africa

DISCUSSION between United Africa Co., Limited, Vauxhall Motors, Limited, and Duple Motor Bodies Limited, has resulted in the development of a small bus due shortly to be marketed in West Africa. With a capacity range of 19 to 23 seats in overall dimensions of 18 ft. 3 in. long by 7 ft. 6 in. wide and about 8 ft. 6 in. high, the design provides a robust, compact and reasonably priced bus intended to compete with foreign vehicles now operating in Commonwealth West African countries. The body has been designed for shipment completely knocked down and for assembly at the U.A.C. plants at Apapa in Nigeria and Tema in Ghana.

United Africa Company has placed an initial order for seven vehicles, which are now under construction at the Duple Midland factory and will be shipped shortly to Ghana and Nigeria. The prototype, which has satisfactorily passed extensive tests under conditions at the Lindley proving ground of the Motor Industry Research Association similar to those found in West Africa, we were able to inspect recently. It is undoubtedly an attractive well-proportioned vehicle, with good interior headroom, that should appeal to operators in other overseas countries as well perhaps as for light-traffic local and feeder services at home. It is announced that a domestic version complying with Ministry of Transport regulations will be made available.

Exterior and interier views of the new Bedford-Duple 19-23 seat bus developed in collaboration with United Africa Company

Bedford J2 Chassis

The selected chassis is the Bedford J2S—basically a normal-control three-tonner with 119-in. wheelbase. Although the prototype is fitted with the Bedford 214 cu. in. petrol engine, a standard alternative in this chassis is the Bedford 200-cu. in. diesel unit, so that diesel power is readily available if required at an additional cost of £125. An advantage of the J2 chassis is that it employs 16-in. diameter wheels and tyres instead of the more common 20-in. equipment, making possible good headroom in low overall height, easy riding over poor roads due to the low unsprung weight and good stability through the low centre of gravity. Apart from these advantages, Vauxhall Motors stated some time ago that in extensive testing of a 4-ton lorry some 17 per cent greater mileage was covered on 16-in. tyres than on 20-in. tyres of the same make on similar duty. With the lower cost of the smaller tyres, this was said to show an overall saving on tyre costs of about 30 per cent.

The only departures from the standard J2 chassis for the present application is the conversion to full forward control, carried out by Duple with Vauxhall Motors approval, and a change to passenger-type rear springs. The basic chassis and cowl with petrol engine has a kerb weight of 1 ton 14½ cwt. (1,750 kg.). A weight of 1 ton (1,016 kg.) for the Duple body in standard trim leaves a passenger and baggage allowance of about 2 ton 17 cwt. (2,896 kg.) inside the recommended gross running weight.

The Duple body is of single-skin steel construction, having a framework of steel sections with steel panelling solid-riveted or welded to the frame. A rigid material-preservative specification has been adhered to throughout and body component replacements are available to ensure simple maintenance and repair. The main bearers are of flanged channel with spot-welded plate to form a box section. Intermediate framing is also of flanged channel and carries a resin-bonded plywood floor, which, apart from wheelarches, is flat throughout and sealed with cold-drying varnish suitable for very hot climates. The entrance steps, just behind the front axle, and the wheelarch covers are of Zintec steel and non-slip alloy. Traps are provided in the floor over the battery (repositioned for this application) and brake servo.

The sides and rear are framed in flanged channel sections of 16 s.w.g. Zintec and the steel panels serve as trussing. The roof framing is of formed steel channel, suitable for roof baggage if required, with single exterior skin. Two roof ventilators are provided, a front one of the fixed extractor type and the other with a rear-opening flap. Front construction is generally similar to that of the sides and the cab is integral with the main body. The cab floor is of steel plate and controllable air intakes are provided above the screen behind a fixed steel sun visor. The curved one-piece windscreen is of ¼-in. laminated and the full-depth sliding side windows of 32-oz. toughened safety glass. All exterior panels are of 20 s.w.g. Zintec steel, those of the roof and below waist level being solid-riveted to the frame and the remainder welded. The body is mounted to the chassis by high-tensile steel bolts and locknuts at accessible points, with fibre inserts between points of contact.

Interior Trim

Standard interior arrangement is for tubular-framed service-type seats, having foam-rubber cushions and rubberised-hair squabs, for 19 passengers. Alternative arrangements are slatted seats for 19 or for upholstered or slatted seats for 23 passengers. An adjustable driver's seat is fitted. The standard entrance is an open-aperture type behind the front wheels on the near side and the emergency exit is a coach-type door opposite to the entrance. There are two lamps fitted in the roof. The plywood floor is finished under the seats in hard spirit paint and covered along the gangway with 2-mm. lino. A full-depth stanchion fitted to the right of the entrance has a waist-high panel and guard rails are fitted to the inside of all opening windows.

Among the additional equipment available at extra cost are chequered alloy floor plate, three-way-opening roof light, tubular roof baggage rack and access ladder, adjustable ventilators in front corners, waist-high partition and full-height stanchions behind driver's seat, two-panel folding door at entrance and various paint finishes.

Do-It-Yourself Van

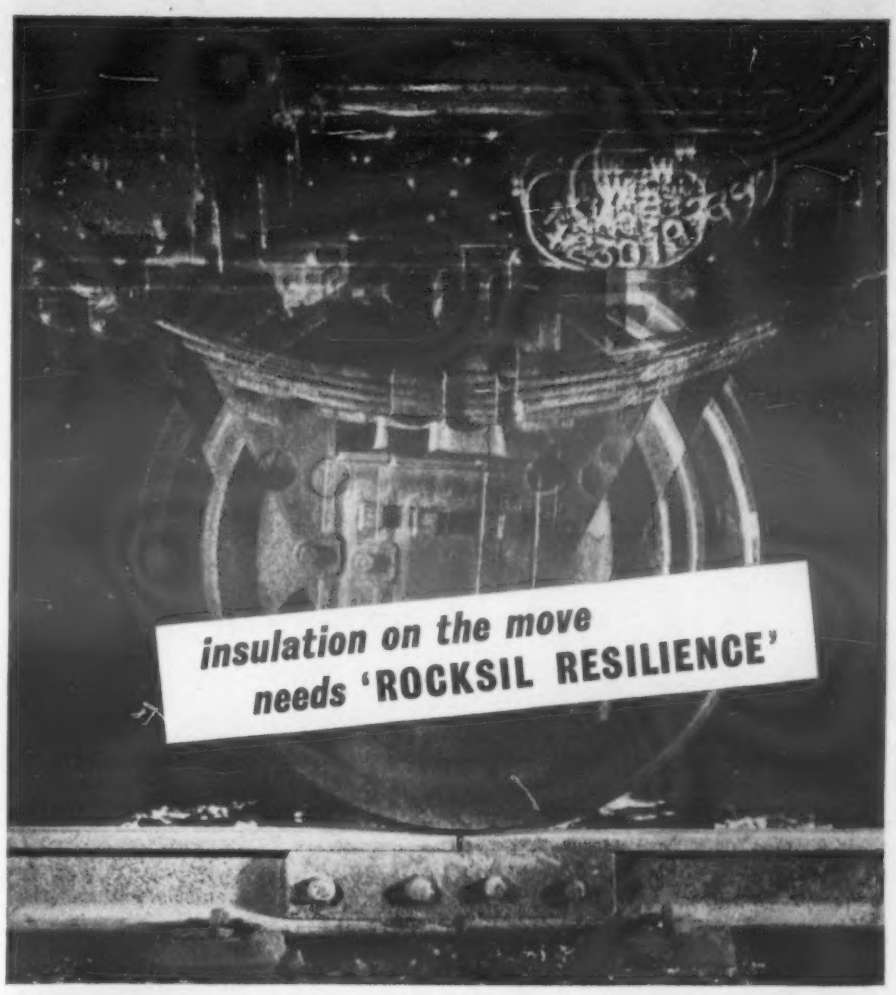
NORAL DESIGN BUILT BY WILLOWBROOK

AN interesting aluminium-alloy van body designed by Northern Aluminium Co., Limited, is of notably simple construction that makes it suitable for marketing in kit form and assembly by unskilled labour. The prototype body, which has been built by Willowbrook, Limited, Loughborough, mounted on an Austin 5-ton normal-control diesel chassis, is the subject of our illustration. The body is made up of Noral B51SWP aluminium alloy sheets riveted to extruded sections of the same alloy, which is supplied by Northern Aluminium Company. This method of construction is said to give great strength and resistance to denting. A full-length top-hat section rubbing rail, also in Noral B51SWP, gives protection to the body sills. The body weighs only 10 cwt. complete with heavy-duty extruded Noral B51SWP planks and full-height double doors.

Prototype van body designed by Northern Aluminium Company and built by Willowbrook

It is hoped that a wide range of similar bodies will be available in kit form for overseas markets. Aluminium flooring or lining could be supplied with the kit if required, while a variety of aluminium rear door closure arrangements have also been designed. This new method of supplying packaged body kits should be of great assistance to overseas bodybuilders, for it will enable them to obtain pre-engineered body shells that can easily be assembled by local labour and fitted out to suit local conditions, requirements and loads.

This example of a North Eastern Region method of displaying railway information on housing estates is at The Green, Billingham-on-Tees



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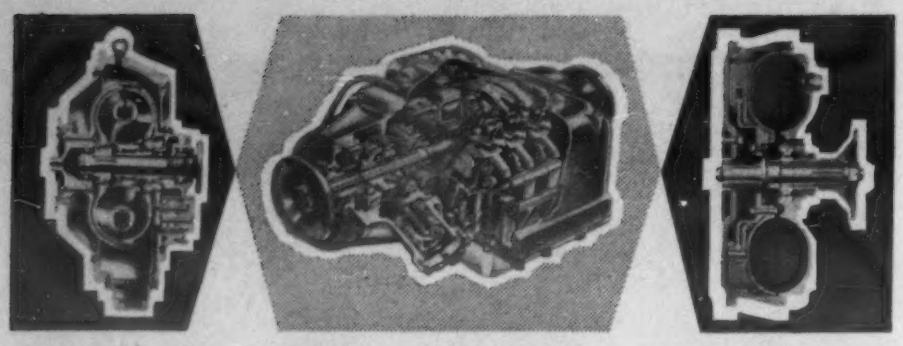

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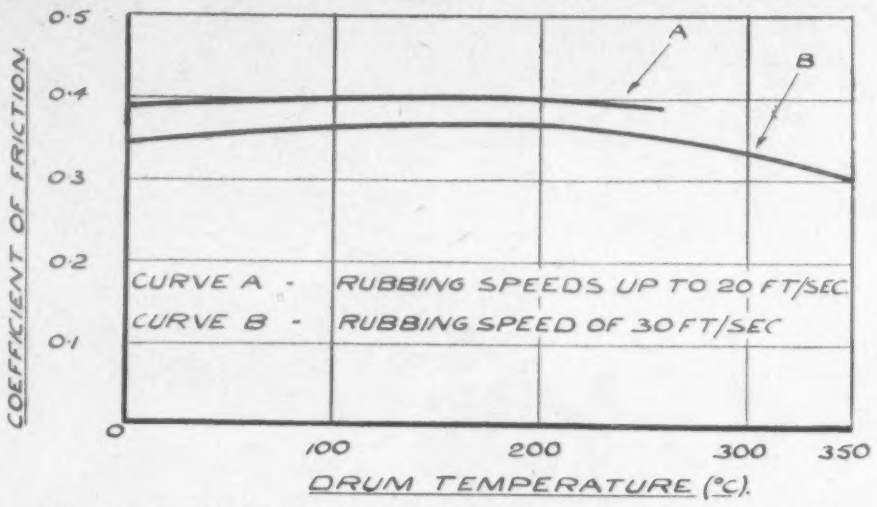
ANTI-FADE BRAKE LINING

New Ferodo Material for Commercial Vehicles

NOW available from the manufacturer's branches in sizes suitable for medium to heavy commercial vehicles is a new series of anti-fade brake linings developed by Ferodo, Limited, Chapel-en-le-Frith. Designated Ferodo AM, the new material is said largely to have solved, within its field of application, the problem of producing a moulded brake lining that is universal in application and economical in manufacture. It is a durable high-friction material that has been designed by the Ferodo research laboratories with a view to bulk production on new plant. By deliberately limiting application to the medium to heavy classes of commercial vehicle, the company is able to market Ferodo AM at substantially reduced prices.

All friction materials are affected to a greater or lesser extent by such features as temperature, rubbing speed and surface pressure. The accompanying illustration shows the temperature dependance of AM2—a typical lining in the new series—in two regimes, curve A for rubbing speeds up to 20 ft. per sec. and curve B for rubbing speeds up to 30 ft. per sec. For an average commercial vehicle with average wheels (36 in. overall tyre dia.) and brakes (14 in. dia.) these rubbing speeds represent road speeds of 35 and 52.5 m.p.h. respectively, corresponding to the normal operating speeds of medium to heavy commercial vehicles in this country at present in the one regime and in some overseas countries or possibly on future British motorways in the other.



Friction characteristics of Ferodo AM2, one of a series of new moulded brake lining materials for commercial vehicles

High Friction Level

It will be noted that the friction level for AM2 is higher than for most moulded linings and, in fact, is such that the new material can be substituted for woven linings, which usually have inferior fade resistance but higher cold friction, with confidence. The shape of the friction-temperature curve at drum temperatures above 200 deg. C. is significant. Many moulded linings have the characteristic of a friction level that rises with temperature over part of the curve and then falls sharply (fades) over a fairly narrow band of temperature. The practical disadvantage and potential danger of the tendency to fade sharply at temperatures reached fairly commonly in the normal operation of heavily loaded goods vehicles on hilly routes, especially where the driver omits to use the lower gears or coasts on downgrades, are obvious; the much more gradual falling off achieved with AM2 is a significant advance, not only in that it promises to maintain braking efficiency longer under arduous operating conditions or abuse, but also by requiring progressively increasing pedal pressure as drum temperature rises to obtain a given braking effect, thereby giving the driver ample warning when conditions are becoming unduly severe.

The curves illustrated are derived in the main from careful measurements on Ferodo test machines during extensive testing of various samples of the new material under varying conditions. The company says that these results have been generally confirmed in field trials on its own test vehicles during a period of 12 months before releasing the material and that fleet operators who have given it a trial are already adopting it as standard. There are, naturally, differences in operating conditions, brake drum material and previous treatment that could cause variations from the performance indicated, but the curves show what might be expected under average conditions experienced in medium to heavy commercial vehicle usage.

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You take the 'HIGHROAD' and see how its narrow grooves of special design will not pick-up or carry destructive stones. The groove bases are also shaped to resist tread cracking.

R.S.A. JUBILEE TOUR

In the North and Scotland

FOR the second phase of its golden jubilee celebrations, the Railway Students Association went north to York on July 11. The party, led by the R.S.A. president, Mr. A. B. B. Valentine (chairman of London Transport), was met by Mr. H. A. Short, general manager of the North Eastern Region. The tour proper commenced the following day (Sunday) with a visit to Lake Ullswater, in conjunction with British Railways, Ribble Motor Services, and the Ullswater Navigation and Transit Company. On July 13 members heard and discussed a paper by Mr. J. H. M. True, traffic manager (Tyne and Wear), on "Railway Modernisation on Tyneside," in which he paid tribute to the partnership evolved in the North-East between industry and transport. At the invitation of the Tyne Improvement Commission a river trip was made to the iron ore discharging plant at Tyne Dock.

Tuesday, July 14, was given over to a visit to the Dorman Long beam mill at Lackenby, Newport marshalling yard and the new Thornaby motive power depot. On the following day the coal staiths at Blyth and the rail installation at the N.C.B. colliery at Lynemouth, near Ashington, were toured, following which there was an invitation to inspect the new B.R.S. depot at the Team Valley Estate, Gateshead. A track walking party across the Forth Bridge followed the arrival of the party in Edinburgh, where they also visited the diesel railcar maintenance depot at Leith Central. This concluded the main programme laid down, but a smaller party took advantage of an invitation extended by Mr. James Amos, chairman of Scottish Omnibuses, to undertake a coach tour on Friday and Saturday to Glen Affric, Loch Ness, Inverness, Dingwall, Ullapool, Gairloch and back to Inverness.

Virtually all-embracing in scope, a new type of exhibition organised by Industrial and Trade Fairs, Limited, the Engineering Materials and Design Exhibition, will be held at Earls Court, London, from February 22 to 26 next year. It is proposed to display the largest and most varied selection of materials and components ever assembled under one roof to interest engineering designers from every sphere of industry and concurrently to hold a conference in the same building on engineering materials.

SOCIAL AND PERSONAL

Institute of Transport Awards

THE Institute of Transport announces the following awards for papers submitted during the 1958-59 session and in respect of successes at the Institute of Transport examinations held in May, 1959:

British Transport Commission awards:—
To Mr. H. E. Osborn, chief accountant and financial adviser, British Transport Commission, for his paper "Transport Costs."
To Mr. C. E. Whitworth, general assistant to the general manager, Eastern Region, for his paper "Some Impacts of Air and Road Transport on Railway Economics and Practice."
To Mr. F. R. L. F. Wentworth, assistant transport controller, Schweppes, Limited, for a meritorious performance in the associate membership examination.
To Mr. D. L. Knights, clerk, Eastern Region, for a meritorious performance in the graduateship examination.

B.E.T. road passenger transport award: Divided equally between Messrs. J. L. Jones, driver, London Transport, and F. A. Mason, M.C., chief engineer, Western Welsh Omnibus Co., Limited.

Bristol and White-Smith air transport awards: Medal to Mr. J. W. Swann, passenger services manager, British European Airways; prize to Mr. K. F. R. Rogers, navigating officer instructor, British Overseas Airways Corporation.

Dock and Harbour Authorities Association studentship to Mr. R. L. Oliver, clerk, British Transport Docks, Hull.

Institute associate membership examination prizes: for first place to Mr. G. Jones, air traffic control officer, Ministry of Transport and Civil Aviation; for second place to Mr. N. J. D. Whittle, clerk, Central S.M.T. Co., Limited.

Institute graduateship examination prizes: for first place to Mr. J. P. Parslow, management trainee, Unilever, Limited; for second place to Mr. N. D. G. Mackenzie, special duties clerk, Bournemouth Corporation Transport Services.

"General Steam" award to Mr. J. R. Basham, costing clerk, Thames Steam Tug and Lighterage Co., Limited.

* * *

Mr. S. E. Raymond, M.Inst.T., has been appointed assistant general manager (traffic), Scottish Region, B.R. Mr. Raymond was educated at an orphanage and the Grammar School, Hampton. He entered the Civil Service in 1930 as a tax officer and by 1939 was assistant secretary of the

Mr. S. E. Raymond

Society of Civil Servants. In 1944 he was commissioned in the Royal Artillery (Field) serving in Normandy. He served in Belgium as a civil affairs staff officer in 1945, entered Germany with the U.S. Ninth Army as a military government officer, and was promoted to lieutenant-colonel in 1946. In December of that year Mr. Raymond joined the London Passenger Transport Board as principal executive assistant to the chief staff and welfare officer. In September, 1948, he was appointed chief staff and welfare officer to the then Road Transport Executive; four years later he became chief officer (organisation) of British Road Services, combining these duties with those of his existing post. He was instrumental in the administration of road haulage disposals. In November, 1955, he was appointed assistant manpower adviser, British Transport Commission, and in July of the following year became director of establishment and staff. Since the beginning of 1957 he had been chief commercial manager, Scottish Region.

* * *

Captain G. F. Jeffries has retired as marine superintendent, Victoria, Southern Region, B.R., and is succeeded by Captain P. C. E. Dove.

* * *

Mr. A. S. Bramworth has been appointed mechanical and electrical engineer (workshops) and Mr. T. Matthewson-Dick mechanical and electrical engineer (maintenance), North Eastern Region, B.R.

* * *

Mr. M. W. Davies retired as chief commercial manager of Rhodesia Railways on August 19 and is succeeded by Mr. R. Allan, the assistant chief commercial manager. Mr. R. Allan is in turn succeeded by Mr. K. M. MacDonald.

* * *

We regret to record the recent death, aged 77, of Mr. James Bullock, who was joint managing director, J. Bullock and Sons (1928), Limited, when the B. and S. services were acquired by the West Riding Automobile Co., Limited, nine years ago.

* * *

The death has occurred of Mr. H. H. Sterling, C.M.G., LL.B., M.Inst.T., general manager of the New Zealand Government Railways, 1928-31, after which he served until 1936 as chairman of the Railways Board of Management. He was 73.

* * *

On September 19 the Institution of Railway Signal Engineers is visiting work on the Eastern Region at Temple Mills marshalling yard and between Colchester and Clacton on the 25,000-volt a.c. electrification.

* * *

Mr. T. A. Crowe, chairman and chief managing director, North British Locomotive Co., Limited, has retired from the board for personal reasons, and Mr. Tom Coughtrie has been appointed chairman. Lord Reith joined the board last week and has been appointed vice-chairman.

* * *

British Transport Docks announces the appointment of Mr. B. F. Richards, assistant docks manager, Goole, as dock manager at Plymouth in succession to Mr. L. J. L. Lean, retired. Mr. R. Bury, assistant to docks manager, Middlesbrough and Hartlepools Docks, has been appointed dock superintendent, Middlesbrough Dock. He succeeds Mr. J. A. Lacey, appointed portmaster, Grimsby and Immingham Docks.

* * *

Sir Brian Robertson, chairman of the British Transport Commission, recently used closed-circuit television to talk about railway modernisation to over 800 members of the headquarters staff in four viewing rooms. It was part of a new effort to bring more of the staff into closer contact with management. A film record of the televised talk will be shown to staff of B.T.C. undertakings throughout the country.

First President of B.I.M.

THE president of the Dunlop Rubber Co., Limited, Lord Baillieu, K.B.E., C.M.G., has accepted the nomination of the council of the British Institute of Management for election as president at the annual general meeting in October. This is considered to be a most appropriate choice for the first president of B.I.M., for it was in 1946 that Lord Baillieu (then Sir Clive) acted as chairman of the committee set up by the President of the Board of Trade "to formulate detailed proposals for setting up a central institute for all questions connected with management." The establishment of B.I.M. in 1947 was the direct result of the recommendations put forward by that committee.

* * *

Mr. E. D. Trask, M.I.Mech.E., M.I.Loco.E., at present motive power superintendent, Eastern Region, has been appointed assistant to general manager (special duties); he will advise the general manager on diesel traction matters, help traffic headquarters to supervise the introduction of new maintenance arrangements, and assist in handing over of certain headquarters motive power responsibilities to the new mechanical and electrical organisation referred to elsewhere on this page.

* * *

The appointment has been announced of Mr. L. W. Ibbotson as assistant general manager (modernisation), Western Region, B.R. Mr. Ibbotson entered the service of the former L.N.E.R. as a traffic apprentice in 1927 and after six years training in the Southern, Scottish and North Eastern areas, was appointed assistant yardmaster, West Hartlepool. He then occupied various

Mr. L. W. Ibbotson

posts in the district offices at Darlington, and Newcastle and was appointed trains assistant to the superintendent and locomotive running superintendent at York. In 1945, after a short period as acting district superintendent, York, he became district superintendent, Darlington. In 1950, Mr. Ibbotson was promoted to the Western Region as operating assistant to the operating superintendent, which post he now relinquishes upon taking up his new appointment.

* * *

Mr. A. E. Taylor has been made commercial superintendent, London, Tilbury and Southend Line, Eastern Region, B.R.

* * *

Mr. W. J. Crosland-Taylor, director and general manager, Crosville Motor Services, Limited, will retire on December 31.

* * *

Mr. R. W. Clampitt, stationmaster at York, North Eastern Region, B.R., for the past six years, retired from the railway service at the end of July.

* * *

Mr. J. H. Fraser, O.B.E., chief signal engineer, British Railways Central Staff, will retire on September 12. He will be succeeded by Mr. A. W. Woodbridge, O.B.E., signal engineer, Western Region.

* * *

Three schoolboys aged 13 or 14, from Windsor, Cheltenham and Tonypandy, won footplate trips on the *Bristolian*. They were winners in an essay competition in which 10,000 boys and girls took part and were allowed to keep their footplate passes.

* * *

We regret to record the death, at the age of 53, of Mr. P. Stephenson, regional establishment and staff officer, North Eastern Region, B.R. Mr. Stephenson, who had occupied this post since June, 1957, was a former North Eastern Railway man and he had been concerned with staff matters since 1938.

* * *

The presidential address to the Institution of Locomotive Engineers is to be delivered by Mr. R. A. Smeddle (chief mechanical and electrical engineer, Western Region, British Railways) at a meeting at the Federation of British Industries, 21 Tothill Street, London, S.W.1, at 5.30 p.m. on September 22.

* * *

With the reorganisation of the department of the chief mechanical and electrical engineer of the London Midland Region of British Railways, the following re-designations have been made at Derby:

Mr. H. Randle to be assistant chief mechanical and electrical engineer.
Mr. E. Stanley to be mechanical and electrical engineer (maintenance).
Mr. A. H. Emerson to be electrical engineer.
Mr. C. S. Cocks to be mechanical and electrical engineer (development).
Mr. J. W. Oakton to be outdoor c. and w. engineer.
Mr. F. G. Umpleby to be outdoor machinery engineer.
Mr. R. C. S. Low to be chief technical assistant (inspection).
Mr. J. W. Eling Smith to be chief technical assistant (c. and w.).
Mr. H. S. Hanson to be chief technical assistant (loco).
Mr. F. Harvey to be administrative assistant.

* * *

Mr. T. C. B. Miller, M.I.Mech.E., M.I.Loco.E., has been appointed chief mechanical and electrical engineer, Eastern Region, British Railways, in consequence of a reorganisation whereby the vehicle and plant engineering departments of the Eastern and North Eastern Regions are to be separated, each region to have its own organisation. In the Eastern Region the three departments, mechanical and electric, carriage and wagon, and road motor engineering, have been merged under the above titles and there will be a locomotive engineer, a rolling stock engineer and a plant and road vehicle engineer.

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FOR MAIN LINE SERVICE

As part of their far-reaching modernisation plans, British Transport Commission called upon A.E.I. to supply ten 800-h.p. diesel-electric locomotives for main-line freight duty. The illustration shows the first of these locomotives on test.

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IMPORTANT CONTRACTS

Niger Road Bridge

AN agreement was signed in Lagos last week between the Nigerian Federal Government and Taylor Woodrow (Nigeria), Limited, for the construction of a road bridge from Asaba to Onitsha across the River Niger at a cost of £5,250,000. It will provide the first direct road link between the Eastern and Western regions. A spokesman of the British parent company said in London that work on the mile-long bridge will start at the beginning of November and take over four years to complete.

Perkins D.I. Engines Ordered

Perkins Engines, Limited, announce a substantial order for the Perkins Four 270D four-cylinder direct-injection engine from the largest manufacturer of combine harvesters in Western Europe, Geb. Claas, Maschienenfabrik G.m.b.H., of Harsewinkel, Western Germany.

New Dredger for Humber Ports

The British Transport Commission has placed an order, worth about £260,000, with the Clyde shipbuilding firm of Lobnitz and Co., Limited, Renfrew, for a dredger for use at the Humber ports. It is to be delivered at Hull towards the end of next year.

County Council Purchases

Northumberland County Council has accepted tenders from Murray and Charleton, Limited, for five Austin diesel tipping lorries and from Charles G. S. Buist, Ltd., for five Morris-Commercial diesel tipping lorries. Cumberland County Council has accepted the tender of G. C. Smith (Coachworks) for three ambulances on Austin chassis.

Improvement at Cardiff Docks

An improvement scheme costing £140,000 for the north side of Queen Alexandra Dock, Cardiff, to be undertaken by British Transport Docks will extend A transit shed by 170 ft. to give a further 34,000 sq. ft. of covered accommodation. Improvements will also be made in the road and rail access to the berth and hard-standing space will be provided for cargo requiring temporary accommodation in the open.

A.E.C. Engines for Finland

A.E.C., Limited, has announced an order for 500 diesel engines from Finland, the largest order received from that country for A.E.C. engines. The units are for installation in passenger and goods vehicles manufactured by the A.E.C. distributor, Vanajan Autotehdas Oy., Helsinki, and delivery is scheduled for completion in one year. A.E.C., Limited, has also received an order for a further batch of heavy-duty six-by-four tractors from Iraq Petroleum Company to join the 35 A.E.C. vehicles already delivered to the company since 1958.

Large Army Orders for International Harvester

The motor truck and construction equipment divisions of the International Harvester Company, Chicago, have been awarded three contracts by the United States Army, with a total value of $41.7 million. The largest single contract is for 2,928 5-ton six-by-six tactical vehicles costing approximately $30 million, for delivery at the rate of 240 a month; thus far, 21,573 vehicles of this type have been supplied to the American Armed Forces by the International Harvester Company. The two other contracts are for 392 TD-24 and 256 TD-20 diesel crawler tractors.

Super Hercules Air Freighters Ordered

Firm orders have been placed for 18 of the Lockheed GL207 Super Hercules long-range turboprop cargo aircraft by Pan American World Airways for 12 and by Slick Airways for six machines. Pan American has an option on a further 12 and Slick on five more. The Super Hercules is powered by four Allison 6,500-h.p. turboprop engines and has a maximum payload capacity of 78,000 lb. It is capable of operating nonstop across the Atlantic in both directions with a payload of 50,000 lb. Delivery to both operators should start in 1962. According to the Pan American company's president, Mr. Juan Trippe, the aircraft should permit cutting most overseas cargo and mail rates by half.

★

LONGMOOR TRAINING

(*Continued from page* 14)

for the exercise. Such moves had to be arranged in conjunction with the existing timetable and were therefore a preliminary train running exercise in themselves. Working timetables for the scheme had to be prepared and from that the engine working and personnel rostering was evolved. The cookhouse was run on three shifts to meet hot meal requirements. Schemes of this sort are usually interrupted by surprise incidents such as enemy parachute drops, carried out by Territorial units.

In addition to the foregoing, the Construction troops of 150 and 153 Railway Squadrons, augmented by 345 Construction Squadron, were allocated the task of rearranging the track layout at Oakhanger Station to obviate double line working across the public highway and to bring the crossing into line with M.o.T. requirements.

SHIPPING and SHIPBUILDING

Dockers' Pension Scheme

IT appears likely that a decision will be reached before long on the claim by the Transport and General Workers Union to the Port Employers Association for a pension scheme and sickness benefit. These claims were presented in February and the union has sought a meeting on August 27 with the employers association at which it is hoped an answer may be given. One attractive feature of a pension scheme would be that it could enforce a compulsory retirement age, probably 65, for dock workers, who at present must be paid for so long as they present themselves, irrespective of their working abilities.

Dracone in Commercial Service

ON Sunday last the first commercial cargo to be carried in a Dracone flexible towed container left Fawley, on Southampton Water, for St. Helier, Jersey. The 67-ft. flexible barge, loaded with 10,000 gal. of aviation spirit, was towed behind the tanker *Esso Ottawa* (300 gross tons). The tanker was bound for her normal berth at St. Helier, the Dracone was to be moored and discharged near the Esso depot at La Folie.

Greek Ships on Australian Service?

BECAUSE it can no longer be fitted into the pattern of Union-Castle passenger services, the 18,000-ton motor liner *Bloemfontein Castle*, which has a speed of 18 knots and accommodation for 750 passengers, has been sold to Greek interests in London. She was built as recently as 1950. It is possible that, like two other ships recently sold to Greek owners, she will be used on the Australian trade, a development which has been greeted with little enthusiasm by established lines thereon.

Further Development at Colombo

A SECOND port development scheme, costing more than the project completed in 1956, is to be undertaken by the Ceylon Ministry of Nationalised Services and Shipping at Colombo. This scheme will cost about Rs. 150 million according to estimates finalised by the Colombo Port Commission. The earlier scheme cost Rs. 120 million. It will involve the construction of a breakwater to include 400 acres of water surface, and the construction of alongside berths and other facilities for expeditious handling of cargo. Another breakwater and alongside facilities at Kochchikade will also be provided. The construction of additional warehouses in the port and along the adjoining Beira Lake are part of the scheme.

Working Hours at East African Ports

CHANGES in the pattern of the hours of working, particularly as to overtime, at East African ports will be introduced on October 1 by East African Railways and Harbours. The changes are in accordance with the recommendations of the Parkin reports on working hours and conditions of employment at Mombasa, Tanga, Dar es Salaam, Lindi and Mtwara. The normal working week will be reduced from 45 hours to 43 with a system of two equal shifts each having a break period. At present there is a break for the first shift, but none for the second. At Mombasa, Dar es Salaam and Tanga ports the shifts from Monday to Friday will work from 7 a.m. to 11 p.m. There will be a 30-minute rest period in each shift. On Saturdays the normal working will be two equal shifts from 7 a.m. to 6 p.m. A third, 11 p.m. to 6 a.m., shift may be worked if required and labour is available at Mombasa and Dar es Salaam. At Lindi and Mtwara regular working will normally be limited to a single shift from 7 a.m. to 3 p.m., with a 30-minute break, on Mondays to Fridays, and 7 a.m. to 12.30 p.m. on Saturdays, but a second shift may be worked if required. Overtime rates will be higher than those at present obtaining. Canteen and amenity buildings are being improved or extended.

★

TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

August 31—France.—AFCENT Headquarters, for 12 or 14 500-gallon WATER TANK TRAILERS. Tenders to the Purchasing and Contracting Officer, Headquarters AFCENT, Camp Guynemer, Fontainbleau. (ESB/18667/59.)

September 4—Union of South Africa.—South African Railways for seven WELL WAGONS. Documents and drawings, price £60 per set, from the Chief Stores Superintendent's Office, P.O. Box 8617, Park Chambers, Rissik Street, Johannesburg. (ESB/13634/59.)

September 5—Iran.—Iranian State Railways for 200 4-axle railway TANK WAGONS. Documents available on loan from Export Services Branch, B.o.T. (ESB/18044/59.)

Export Opportunity—New Zealand.—Mason Bros., Limited, P.O. Box 1633, Auckland, C.1, is interested in the manufacture under licence of EQUIPMENT for the BULK HANDLING of cement, including rail and road carriers and site handling and storage equipment. (ESB/16421/59.)

Export Opportunity—U.S.A.—The Atlas Equipment Company, 229 S.W. Blvd., Kansas City, 8, Missouri, has informed the British Consulate at Kansas City that it would like to get in touch with United Kingdom suppliers of FORK-LIFT and PALLET TRUCKS, PALLET LIFT TRUCKS, MATERIAL-HANDLING EQUIPMENT and CONVEYORS. (ESB/16729/59.)

Export Opportunity—Kuwait.—Abdulmutaleb Al-Rifai and Company, P.O. Box 150, Kuwait, has informed the British Political Agency at Kuwait that it would like to get in touch with United Kingdom suppliers of HEAVY-DUTY TRAILERS of 50 tons and upwards. (ESB/17781/59.)

Mr. Donald Gordon, president, Canadian National Railways, recently inspected the control tower of the new Western Region hump marshalling yard at Margam

From the left: Mr. J. R. Hammond, general manager, Western Region; Mr. Gordon; Mr. A. W. Woodbridge, signal engineer, W.R.; Mr. J. C. Kenkel, European general manager, C.N.R.; Mr. K. W. C. Grand, member, B.T.C., and Mr. J. F. M. Taylor, district operating superintendent, Swansea, W.R.

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Printed by Odhams (Watford) Limited, St. Albans Road, Watford, Herts, for and published by Modern Transport Publishing Co., Limited, Russell Court, 3-16 Woburn Place, London, W.C.1.